CITY OF LODI

COUNCIL COMMUNICATION

AGENDA TITLE: Public Hearing to consider adopting resolution certifying the mitigated Negative Declaration for the Calpeak Power – Midway, LLC Lodi Electric Energy Facility

MEETING DATE: December 10, 2002

PREPARED BY: J.D. Hightower

RECOMMENDED ACTION: Certify the mitigated Negative Declaration for the Calpeak Power – Midway , L.L.C. Lodi Electrical Energy Facility.

BACKGROUND INFORMATION: The certification of the mitigated Negative Declaration is necessary prior to executing the anticipated lease agreement. The project evaluated in the mitigated Negative Declaration is the construction and operation of a nominal net 49 megawatt (MW) "simple-cycle" power plant referred to as Lodi Electric Energy Facility (LEEF). The plant will be constructed on property owned by the City of Lodi located at 1215 East Thurman Street, east of State Highway 99. The parcel (Assessor's Parcel Number 049-250-13) is approximately 8.1 acres and the plant will occupy a two acre portion of the parcel. The property is located within the Heavy Industrial (M-2) zoning district. Two natural gas pipeline alternatives were evaluated both of which are low pressure gas pipelines interconnecting into Pacific Gas & Electric (PG&E) gas pipeline #197. Gas pipeline alternative Route 1 was identified as the preferred route. No electrical transmission facilities will be required. There is a metering station that is necessary that is expected to be located north of the City within San Joaquin County. The LEEF will connect directly to the Fred M. Reid Industrial Substation, which is located on the same City-owned parcel as the proposed power plant facility.

The initial study identifies potential impacts to air quality, biological resources, cultural resources, hazardous material, land use planning and noise that could be created by the project. The negative declaration also identifies specific mitigation measures that will be implemented to insure that these potential impacts will be below a level of significant. The initial study identifies two potential sites for the natural gas metering station and evaluates both as potential sites. Specific mitigation measures are identified for each location, as the actual site will be determined in the final design phase of the project. Because all potential impacts can be mitigated to a level beneath significant, staff recommends approval of the Negative Declaration.

FUNDING: None required

Konradt Bartlam
Community Development Director

JDH

APPROVED: _____
~~Dixon~~ Flynn -- City Manager

0230Calpeak.doc 12/05/02

RESOLUTION NO. 2002-251

A RESOLUTION OF THE LODI CITY COUNCIL CERTIFYING THE MITIGATED NEGATIVE DECLARATION AS ADEQUATE ENVIRONMENTAL DOCUMENTATION FOR THE CALPEAK POWER MIDWAY, L.L.C. LODI ELECTRICAL ENERGY FACILITY

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WHEREAS, CalPeak Power – Midway, LLC (CalPeak Power) proposes to construct and operate a nominal net 49 megawatt (MW) "simple-cycle" power plant referred to as Lodi Electric Energy Facility; and

WHEREAS, the plant will be constructed on property owned by the City of Lodi located at 1215 East Thurman Street, east of State Highway 99 on Assessor's Parcel No. 049-250-13; and

WHEREAS, the property is approximately 8.1 acres and the plan will occupy a two-acre portion of the parcel and is located in an industrially zoned portion of the City of Lodi; and

WHEREAS, the Mitigated Negative Declaration was prepared to comply with the California Environmental Review Quality Act (CEQA) and State CEQA guidelines. The purpose of the document is to identify and address potential environmental impacts that may result from the implementation of the proposed project; and

WHEREAS, this project does not have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory; and

WHEREAS, this project has impacts that are individually limited, but not cumulatively considerable. "Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects; and

WHEREAS, this project does not have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly.

WHEREAS, the City, based on the findings of the initial study, has determined that all environmental impacts that result from this project can be mitigated to a less than significant level. Mitigation measures will be adopted as a part of the Mitigation Negative Declaration package to assure that all potentially significant impacts will be mitigated.

NOW, THEREFORE, BE IT RESOLVED, that the City Council of the City of Lodi hereby finds as follows:

1) The City Council has reviewed all documentation and hereby certifies the filing of a Mitigated Negative Declaration as adequate environmental documentation for the proposed construction of a nominal net 49 megawatt (MW) "simple-cycle" power plant referred to as Lodi Electric Energy Facility.

Dated: December 10, 2002

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I hereby certify that Resolution No. 2002-251 was passed and adopted by the City Council of the City of Lodi in a special meeting held December 10, 2002, by the following vote:

AYES: COUNCIL MEMBERS – Beckman, Hansen, Howard, Land, and Mayor Hitchcock

NOES: COUNCIL MEMBERS – None

ABSENT: COUNCIL MEMBERS – None

ABSTAIN: COUNCIL MEMBERS – None

Susan J. Blackston

SUSAN J. BLACKSTON
City Clerk

DECLARATION OF MAILING

On November 27, 2002, in the City of Lodi, San Joaquin County, California, I Lisa Wagner deposited in the United States Mail, envelopes with first-class postage prepaid thereon, containing a copy of the Notice attached hereto, marked Exhibit "A". Said envelopes were addressed as is more particularly shown on Exhibit "B" attached hereto.

There is a regular daily communication by mail between the City of Lodi, CA and the places to which said envelopes were addressed.

I declared under penalty of perjury that the foregoing is true and correct.

Executed on November 27, 2002, at Lodi, California.

Lisa Wagner
Administrative Secretary

NOTICE OF PUBLIC HEARING

THE CITY COUNCIL OF THE CITY OF LODI WILL BE CONDUCTING A PUBLIC HEARING:

- On Tuesday, December 10, 2002 at **7:00 a.m.**
- In the Carnegie Forum, 305 West Pine Street, Lodi, California.

TO CONSIDER:

- The construction and operation of a nominal net 49 megawatt (MW) "simple-cycle" power plant referred to as Lodi Electric Energy Facility (LEEF). The plant will be constructed on property owned by the City of Lodi located at 1215 East Thurman Street, east of State Highway 99. The parcel (Assessor's Parcel Number 049-250-13) is approximately 8.1 acres and the plant will occupy a two-acre portion of the parcel. The property is located within the Heavy Industrial (M-2) zoning district. Two natural gas pipeline alternatives were evaluated both of which are low pressure gas pipelines interconnecting into Pacific Gas & Electric (PG&E) gas pipeline #197. Gas pipeline **alternative Route 1 was identified as the preferred route**. No electrical transmission facilities will be required. The LEEF will connect directly to the Fred M. Reid Industrial Substation, which is located on the same City-owned parcel as the proposed power plant facility.

IF YOU ARE INTERESTED IN FURTHER INFORMATION:

- Please contact the Planning Department at City Hall, 221 West Pine Street, or call (209) 333-6711.

IF YOU ARE INTERESTED IN PRESENTING YOUR VIEWS:

- All views, either for or against the proposal, are invited. It is suggested that you be present at the meeting and speak at that time.
- If you are unable to attend you can submit a letter to the Community Development Director, P.O. Box 3006, Lodi, CA 95241-1910. It must be received before the Hearing if it is to be considered by the Commission. Letters may be submitted into the record at the Hearing.

This notice has been sent to you because property assessed in your name, or a business in your name, is located near the proposed project. If you are not the owner, manager, or agent, we would appreciate your giving this notice to the proper party.

By Order of

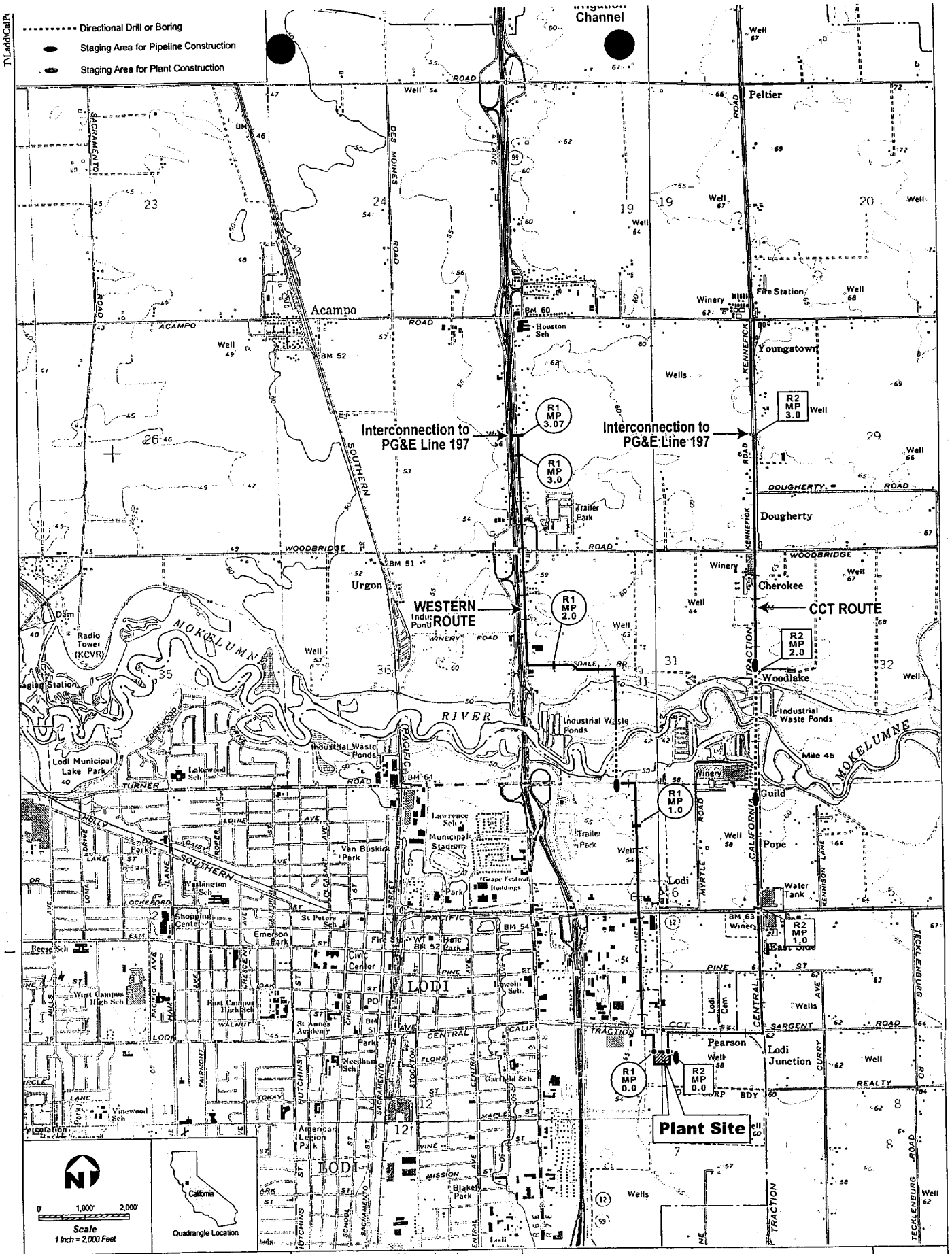
LODI PLANNING COMMISSION

J.D. Hightower

J.D. Hightower
City Planner

Dated: November 27, 2002

Calpeak.doc



URS	Lodi Electric Energy Facility	**Source:** 7.5' *topographic quadrangles:* Lodi North, CA 1968 (Photorevised 1976); Lockeford, CA 1968 (Photorevised 1979) (Minor Revision 1993; Waterloo, CA 1968 (Photorevised 1978; Lodi South, CA 1968 (Photorevised 1976)	Appendix A. AREA MAP OF PROJECT SITE AND ALTERNATIVE GAS PIPELINE ROUTES	October 2002

File Number	APN	County	Owner Name (1)	Address (1)
1)	012-022-035	San Joaquin	Calvary Bible Church of Lodi	18621 N Highway 99 Acampo CA 95220
2)	013-021-017	San Joaquin	Mark S & Michelle V Mayer	20477 N St Rt 99 W Fron Rd Acampo CA 95220
3)	013-021-019	San Joaquin	D & Z Hayes Family Partnership	20201 N St Rt 99 W Fron Rd Acampo CA 95220
4)	013-021-020	San Joaquin	William R & Grace F Reynolds	20075 N St Rt 99 W Fron Rd Acampo CA 95220
5)	013-021-021	San Joaquin	Leigh M & J Holmes	20075 N Highway 99 Acampo CA 95220
6)	013-021-022	San Joaquin	William R & Grace F Reynolds	19951 N St Rt 99 W Fron Rd Acampo CA 95220
7)	013-021-023	San Joaquin	Douglas M & M Denny	19869 N Highway 99 Acampo CA 95220
8)	013-021-026	San Joaquin	Albert & D Thomas	19555 N St Rt 99 W Fron Rd Acampo CA 95220
9)	013-021-027	San Joaquin	Gust & Mary Perlegos	4201 E Woodbridge Rd Acampo CA 95220
10)	013-021-040	San Joaquin	James A & Carolyn L Capis	20331 N St Rt 99 W Fron Rd Acampo CA 95220
11)	013-021-041	San Joaquin	James A & Carolyn L Capis	20303 N St Rt 99 W Fron Rd Acampo CA 95220
12)	013-021-048	San Joaquin	Robert C Saint John	20639 N St Rt 99 W Fron Rd Acampo CA 95220
13)	013-021-049	San Joaquin	John B & Jacoba M Zunino	?20525 N St Rt 99 W Fron Rd Acampo CA 95220
14)	013-021-050	San Joaquin	Lester T Calkins	19825 N St Rt 99 W Fron Rd Acampo CA 95220
15)	013-021-051	San Joaquin	Lester T Calkins	19501 N St Rt 99 W Fron Rd Acampo CA 95220
16)	013-021-058	San Joaquin	?	??4112 E Acampo Rd Acampo CA 95220
17)	013-022-010	San Joaquin	Anne J Cataldo	4177 E Winery Rd Acampo CA 95220
18)	013-022-011	San Joaquin	Albert A & Robbie Clark	4011 E Winery Rd Acampo CA 95220
19)	013-022-012	San Joaquin	Keizo & M Okuhara	4162 E Woodbridge Rd Acampo CA 95220
20)	013-022-013	San Joaquin	Stephen M & Kathlyn F Kappos	4262 E Woodbridge Rd Acampo CA 95220
21)	013-022-016	San Joaquin	Lester T Calkins	18915 N St Rt 99 W Fron Rd Acampo CA 95220
22)	013-022-017	San Joaquin	Nancy G Lopez	18881 N Highway 99 Acampo CA 95220
23)	013-022-018	San Joaquin	James L & M Freeman	18767 N Highway 99 Acampo CA 95220
24)	013-022-020	San Joaquin	North River Partners	18401 N St Rt 99 W Fron Rd Acampo CA 95220

25)	013-022-021	San Joaquin	Lone Star Industries Corp	18651 N St Rt 99 W Fron Rd Acampo CA 95220	
26)	013-022-022	San Joaquin	Lone Star Industries Corp	3996 E Winery Rd Acampo CA 95220	
27)	013-022-032	San Joaquin	Jimmie Cook	19351 N Highway 99 Acampo CA 95220	
28)	013-022-033	San Joaquin	JSG Trucking Co	19400 N Highway 99 Acampo CA 95220	
29)	013-022-034	San Joaquin	Rodney Busk	19320 N St Rt 99 W Fron Rd Acampo CA 95220	
30)	013-022-037	San Joaquin	Salvatore Cancilla	3990 E Woodbridge Rd Acampo CA 95220	
31)	013-022-039	San Joaquin	County of San Joaquin	19300 N Highway 99 Acampo CA 95220	
32)	013-022-048	San Joaquin	Christy Bros Ptp	?18691 N St Rt 99 Fron Rd Acampo CA 95220	
33)	013-022-057	San Joaquin	Calva Products Inc	4351 E Winery Rd Acampo CA 95220	
34)	013-022-058	San Joaquin	Jimmie Cook	19351 N Highway 99 Acampo CA 95220	
35)	013-022-059	San Joaquin	Jimmie Cook	19351 N Highway 99 Acampo CA 95220	
36)	017-080+076	San Joaquin	James A & Jaqueline D Floyd	P.O Box 1045 Lodi CA 95241	
37)	017-080-028	San Joaquin	Bobby Joe & Ardyth L Biffel	4851 E Woodbridge Road Acampo CA 95220	
38)	017-080-029	San Joaquin	Gustave & R Wagenhoffer	4775 E Woodbridge Road Acampo CA 95220	
39)	017-080-030	San Joaquin	William A & Margaret A Sandeen, Arbor Secure Storage Complex	P.O. Box 343 Acampo CA 95220	
40)	017-080-032	San Joaquin	James J & Sandra K Gribaudo	22750 E Liberty Road Clements CA 95227	
41)	017-080-035	San Joaquin	Marvin C & E Mayer	4980 E Woodbridge Road Acampo CA 95220	
42)	017-080-037	San Joaquin	Chris A Peterson	20498 N Hwy 99 Acampo CA 95220	
43)	017-080-050	San Joaquin	George Perlegos	15506 N Curry Avenue Lodi CA 95240	
44)	017-080-052	San Joaquin	State of California		
45)	017-080-053	San Joaquin	The Arbor LLC	17300 Redhill Ave, Suite 280 Irvine, CA 92614	
46)	017-080-054	San Joaquin	William R & Jeanette Thomas	19996 North Hwy 99 Acampo CA 95220	
47)	017-080-055	San Joaquin	William R & Jeanette Thomas	19996 North Hwy 99 Acampo CA 95220	
48)	017-080-064	San Joaquin	Margaret Corda	20298 North Hwy 99 Acampo CA 95220	
49)	017-080-065	San Joaquin	Jeff Perlegos	1026 Bradford Circle Lodi CA 95240	
50)	017-080-068	San Joaquin	Vernon & Judith M Mobbs	20446 North Hwy 99 Acampo CA 95220	

51)	017-080-069	San Joaquin	Todd & Michelle R Grosz	20442 North Hwy 99 Acampo CA 95220
52)	017-080-077	San Joaquin	George & D Floyd	4865 E Woodbridge Road Acampo CA 95220
53)	017-080-080	San Joaquin	Anthony R McKissick	20518 North Hwy 99 Acampo CA 95220
54)	017-080-081	San Joaquin	James & Pamela Rae Pettersen	5180 E Acampo Rd Acampo CA 95220
55)	017-090-001	San Joaquin	James A & Carolyn L Capis	20203 North Hwy 99 Acampo CA 95220
56)	017-090-002	San Joaquin	Michael & Lisa Douglas	490 Moore Rd Woodside CA 94062
57)	017-090-003	San Joaquin	William H & Dixie Ray	4678 E Woodbridge Rd Acampo CA 95220
58)	017-090-004	San Joaquin	Raymond D & E Wilson Jr	4734 E Woodbridge Rd Acampo CA 95220
59)	017-090-005	San Joaquin	Thomas J & V Vance	4754 E Woodbridge Rd Acampo CA 95220
60)	017-090-006	San Joaquin	Reuben & Janie Schlaht	4772 E Woodbridge Rd Acampo CA 95220
61)	017-090-007	San Joaquin	Tony & Elsie Martin	4860 E Woodbridge Rd Acampo CA 95220
62)	017-090-008	San Joaquin	Marvin C & Erma Mayer	4980 E Woodbridge Road Acampo CA 95220
63)	017-090-009	San Joaquin	J K & R Namba	5196 E Woodbridge Rd Acampo CA 95220
64)	017-090-012	San Joaquin	Robert Mondavi Properties	901 Kaiser Rd Napa CA 94558
65)	017-090-020	San Joaquin	Burlington Realty Inc	1671 Mendocino Drive Concord CA 94521
66)	017-090-021	San Joaquin	Burlington Realty Inc	1671 Mendocino Drive Concord CA 94521
67)	017-090-022	San Joaquin	Harold & M Koenig	8541 E Orchard Rd Acampo CA 95220
68)	017-090-023	San Joaquin	William F & M Johnson	907 Tara Place Lodi CA 95240
69)	017-090-026	San Joaquin	Dennis P & R Alexander	21900 N DeVries Rd Lodi CA 95242
70)	017-090-028	San Joaquin	Dennis P & R Alexander	21900 N DeVries Rd Lodi CA 95242
71)	017-090-029	San Joaquin	Kenneth & Elizabeth Williams	121 Lidster Ave Grasss Valley CA 95945
72)	017-090-030	San Joaquin	Dennis P & R Alexander	21900 N DeVries Rd Lodi CA 95242
73)	017-090-031	San Joaquin	Dennis P & R Alexander	21900 N DeVries Rd Lodi CA 95242
74)	017-090-032	San Joaquin	Marie Goehring	4777 E Clarksdale Rd Acampo CA 95220
75)	017-090-035	San Joaquin	Michael & Lisa Douglas	490 Moore Rd Woodside CA 94062
76)	017-090-036	San Joaquin	Sheldon Telfer Western Oil & Spreading	P.O. Box 709 Martinez CA 94553

77)	017-090-037	San Joaquin	Spencer R & Roberta Kaitz	20880 Baker Rd #9 Castro Valley CA 94546
78)	017-090-038	San Joaquin	D W Bird	4664 Clarksdale Rd Acampo CA 95220
79)	017-090-046	San Joaquin	Dennis P & R Alexander	21900 N DeVries Rd Lodi CA 95242
80)	017-090-047	San Joaquin	Mitsutomo W & Dolly K Ouye	4664 E Clarksdale Rd Acampo CA 95220
81)	017-090-048	San Joaquin	Walter & Jo Ann Matthews	2601 Maxwell Ave Oakland CA 94619
82)	017-090-050	San Joaquin	Robert Mondavi Properties	901 Kaiser Rd Napa CA 94558
83)	017-090-051	San Joaquin	Woodbridge Partners Inc	639 E Lockeford St Lodi CA 95240
84)	017-090-052	San Joaquin	Mokelumne River School	P.O. Box 349 Lodi CA 95241
85)	017-090-056	San Joaquin	Stephen M & Kathlyn F Kappos	8275 E Orchard Rd Acampo CA 95220
86)	017-090-057	San Joaquin	Phillip Gene & Loretta M Webb	4885 E Clarksdale Rd Acampo CA 95220
87)	017-090-059	San Joaquin	Stephen M & Kathlyn F Kappos	8275 E Orchard Rd Acampo CA 95220
88)	017-090-060	San Joaquin	Stephen M & Kathlyn F Kappos	8275 E Orchard Rd Acampo CA 95220
89)	049-020-036	San Joaquin	CWR Industries	P.O. Box 1450 Chicago IL 60690
90)	049-020-037	San Joaquin	Murdaca Family	1135 Rivergate Drive Lodi CA 95240
91)	049-020-038	San Joaquin	CWR Industries	P.O. Box 1450 Chicago IL 60690
92)	049-020-039	San Joaquin	CWR Industries	P.O. Box 1450 Chicago IL 60690
93)	049-020-040	San Joaquin	CWR Industries	P.O. Box 1450 Chicago IL 60690
94)	049-020-041	San Joaquin	Murdaca Family	1135 Rivergate Drive Lodi CA 95240
95)	049-020-042	San Joaquin	David M & Kandas Vaccarezza	P.O. Box 265 Victor CA 95253
96)	049-020-045	San Joaquin	Diener Precision Pumps	P.O. Box 771 Clements CA 95227
97)	049-030-009	San Joaquin	Yanke Investments	817 E Turner Rd Lodi CA 95240
98)	049-030-016	San Joaquin	Delmar D & Doris Batch	375 N Cluff Ave Lodi CA 95240
99)	049-040-037	San Joaquin	Stephen C Kludt	P.O. Box 166 Lodi CA 95240
100)	049-040-038	San Joaquin	City of Lodi	City Hall Lodi CA 95240
101)	049-040-041	San Joaquin	Dale A & B Gross	1912 Santa Ynez Drive Lodi CA 95242
102)	049-040-044	San Joaquin	Pacific Coast Producers	P.O. Box 1600 Lodi CA 95241

103)	049-040-059	San Joaquin	LTS Rentals Corp	P.O. Box 1120 Lodi CA 95241
104)	049-040-060	San Joaquin	Marica N Storck	847 N Cluff Ave Lodi CA 95240
105)	049-040-063	San Joaquin	Larry E & Eileen G Methvin	1876 Live Oak Way Upland CA 91784
106)	049-040-064	San Joaquin	Mechanical Analysis Repair Inc	142 N Cluff Ave Lodi CA 95240
107)	049-040-071	San Joaquin	Carlos E & Linda A Mosto	749 Harding Blvd Roseville CA 95678
108)	049-040-074	San Joaquin	D & D Properties	P.O. Box 1120 Lodi CA 95241
109)	049-050-007	San Joaquin	Raymond O & Sheila R Main	1209 E Mounce St Lodi CA 95240
110)	049-050-009	San Joaquin	Fred Calosso	1212 Mounce St Lodi CA 95240
111)	049-050-010	San Joaquin	Jesus Gonzalez	46 N Cluff Ave Lodi CA 95240
112)	049-050-011	San Joaquin	Pinkerton Holdings Inc	42 N Cluff Ave Lodi CA 95240
113)	049-050-012	San Joaquin	Pinkerton Holdings Inc	40 N Cluff Ave Lodi CA 95240
114)	049-050-013	San Joaquin	Central Storage Inc	36 N Cluff Ave Lodi CA 95240
115)	049-050-014	San Joaquin	Pinkerton Holdings Inc	32 N Cluff Ave Lodi CA 95240
116)	049-050-015	San Joaquin	Takaomi Ishitani	1209 E Pine St Lodi CA 95242
117)	049-050-016	San Joaquin	David W & Roberta L Brazil	1205 E Pine St Lodi CA 95240
118)	049-050-018	San Joaquin	Pinkerton Holdings Inc	33 N Cluff Ave Lodi CA 95240
119)	049-050-019	San Joaquin	Southport Land & Coml Co Corp	1150 E Victor Rd Lodi CA 95240
120)	049-050-039	San Joaquin	John D & Lori A Denigris	246 Cluff Ave Lodi CA 95240
121)	049-050-040	San Joaquin	Kenneth & Stephanie Norgaard	1210 E Victor Rd Lodi CA 95240
122)	049-050-055	San Joaquin	Pinkerton Holdings Inc	31 N Cluff Ave Lodi CA 95240
123)	049-050-056	San Joaquin	Vesta H Mason	906 Kramer Dr Lodi CA 95242
124)	049-050-057	San Joaquin	Marvin Mounce	54 N Cluff Ave Lodi CA 95240
125)	049-050-058	San Joaquin	Marvin Mounce	50 N Cluff Ave Lodi CA 95240
126)	049-080-036	San Joaquin	Gary & Kathleen Guthrie	1235 E Lockforde St Lodi CA 95240
127)	049-080-049	San Joaquin	Donald E & L Geiszler	836 N Cluff Ave Lodi CA 95240
128)	049-080-050	San Joaquin	Homer Lee	802 N Cluff Ave Lodi CA 95240

129)	049-080-051	San Joaquin	Donald & C Ford	740 N Cluff Ave Lodi CA 95240
130)	049-080-054	San Joaquin	Suresh & Savita Bhaktra	1201 E Lockeford St Lodi CA 95240
131)	049-080-055	San Joaquin	Donald & C Ford	500 E Lockeford St Lodi CA 95240
132)	049-080-056	San Joaquin	Donald & C Ford	530 E Lockeford St Lodi CA 95240
133)	049-080-059	San Joaquin	Donald & C Ford	500 N Cluff Ave Lodi CA 95240
134)	049-080-060	San Joaquin	John Masonry	310 N Cluff Ave Lodi CA 95240
135)	049-080-063	San Joaquin	Donald & C Ford	500 E Lockeford St Lodi CA 95240
136)	049-080-064	San Joaquin	Gary V & K Guthrie	400 N Cluff Ave Lodi CA 95240
137)	049-080-065	San Joaquin	Gerald J Vanderlans	1200 W Turner Road Lodi CA 95242
138)	049-080-066	San Joaquin	Homer Lee	200 Turner Road Lodi CA 95240
139)	049-080-068	San Joaquin	Homer Lee	1250 E Turner Road Lodi CA 95240
140)	049-080-069	San Joaquin	Bob P & Janice S Hester	330 N Cluff Ave Lodi CA 95240
141)	049-080-070	San Joaquin	Blaine J Dejong	324 N Cluff Ave Lodi CA 95240
142)	049-080-075	San Joaquin	Stockton Cellular Tel	5400 Carmon Point Kirkland WA 98033
143)	049-080-076	San Joaquin	Theron R & Lola J Kettelman	642 N Cluff Ave Lodi CA 95240
144)	049-090-029	San Joaquin	Allan & R Askew	1204 E Pine St Lodi CA 95240
145)	049-090-030	San Joaquin	Dagobert O & M Schmidt	1220 E Pine St Lodi CA 95240
146)	049-090-031	San Joaquin	Russell & Jennifer Hannink	38 S Cluff Ave Lodi CA 95240
147)	049-090-032	San Joaquin	John R & Shirley A Crooks	20 S Cluff Ave Lodi CA 95240
148)	049-090-034	San Joaquin	Beth G Latta	214 S Cluff Ave Lodi CA 95240
149)	049-090-035	San Joaquin	Beth G Latta	1203 E Lodi Ave Lodi CA 95240
150)	049-090-037	San Joaquin	Meehlis Modular Buildings Inc	1303 E Lodi Ave Lodi CA 95240
151)	049-090-038	San Joaquin	Abdon J & Ruth Davis	60 S Cluff Ave Lodi CA 95240
152)	049-090-039	San Joaquin	Potter Enterprises Inc	100 S Cluff Ave Lodi CA 95240
153)	049-180-009	San Joaquin	Diamond Development Co	1115 Black Diamond Way Lodi CA 95240
154)	049-180-010	San Joaquin	David L Goetz	1121 Black Diamond Way Lodi CA 95240

155)	049-180-012	San Joaquin	Kathleen Kelly	507 N Cluff Ave Lodi CA 95240
156)	049-180-013	San Joaquin	Kathleen Kelly	1127 Black Diamond Way Lodi CA 95240
157)	049-180-014	San Joaquin	Paul & Sharon Alamo	431 N Cluff Ave Lodi CA 95240
158)	049-180-015	San Joaquin	James A Weybret	425 N Cluff Ave Lodi CA 95240
159)	049-180-016	San Joaquin	Michael L & Lisa J Zicari	419 N Cluff Ave Lodi CA 95240
160)	049-180-017	San Joaquin	Timothy J & Raelynn Finch	1122 Black Diamond Way Lodi CA 95240
161)	049-180-018	San Joaquin	Lap C & Yee C Wong	1114 Black Diamond Way Lodi CA 95240
162)	049-180-027	San Joaquin	Kathleen Kelly	511 N Cluff Ave Lodi CA 95240
163)	049-180-028	San Joaquin	City of Lodi	Lodi City Hall Lodi CA 95240
164)	049-190-013	San Joaquin	Gary Archer	247 Commerce St Lodi CA 95240
165)	049-190-014	San Joaquin	William & Carolyn Meehleis	269 Commerce St Lodi CA 95240
166)	049-190-015	San Joaquin	William & Carolyn Meehleis	283 Commerce St Lodi CA 95240
167)	049-250-015	San Joaquin	Certainteed Corp	300 Beckman Rd Lodi CA 95240
168)	049-250-017	San Joaquin	Edna H Pagel Inc	1150 Thruman St Lodi CA 95240
169)	049-250-018	San Joaquin	Schaefer Systems LLC	1250 Thruman St Lodi CA 95240
170)	049-250-019	San Joaquin	?	19465 N Wilderness Way Woodbridge CA 95258
171)	049-250-020	San Joaquin	?	PO Box 2539 Lodi CA 95241
172)	049-250-061	San Joaquin	City of Lodi	Lodi City Hall Lodi CA 95240
173)				

File Number	APN	County	Owner Name (1)	Address (1)	A
1)	017-010-001	San Joaquin	Richard N & M Williams	6132 E Woodbridge Rd Acampo CA 95220	
2)	017-010-004	San Joaquin	Ralph I & Marianne Ono	6420 E Woodbridge Rd Acampo CA 95220	
3)	017-010-005	San Joaquin	Ted N & Cathy R Lauchland	6480 E Woodbridge Rd Acampo CA 95220	
4)	017-010-015	San Joaquin	Victor War Games Inc	18120 N Kennefick Rd Acampo CA 95220	
5)	017-010-017	San Joaquin	Liberty Winery Inc	18530 N Kennefick Rd Acampo CA 95220	
6)	017-010-021	San Joaquin	Tokiko Doi	6400 E Woodbridge Rd Acampo CA 95220	
7)	017-010-022	San Joaquin	Robert Mondavi Inc	6051 E Woodbridge Rd Acampo CA 95220	
8)	017-010-025	San Joaquin	Grenz Trust	18650 N Kennefick Rd Acampo CA 95220	
9)	017-010-026	San Joaquin	George A & J Gillespie	6298 E Woodbridge Rd Acampo CA 95220	
10)	017-010-030	San Joaquin	Fred K Nakagawa	7100 E Woodbridge Rd Acampo CA 95220	
11)	017-014-022	San Joaquin	Michael C Evans	6001 E Woodbridge Rd Acampo CA 95220	
12)	017-014-031	San Joaquin	William & Ruth Brown	20506 N Kennefick Rd Acampo CA 95220	
13)	017-014-032	San Joaquin	Semas Limited Partnership	6410 E Acampo Rd Acampo CA 95220	
14)	017-014-041	San Joaquin	William R & R Brown	20450 N Kennefick Rd Acampo CA 95220	
15)	017-014-042	San Joaquin	Daniel G & Sally A Mills	20350 N Kennefick Rd Acampo CA 95220	
16)	017-014-046	San Joaquin	William & C Cooper	6225 Dougherty Rd Acampo CA 95220	
17)	017-014-047	San Joaquin	Randy C & A Roget	6425 Dougherty Rd Acampo CA 95220	
18)	017-014-048	San Joaquin	Thomas G & Frances E Adams	20090 N Kennefick Rd Acampo CA 95220	
19)	017-014-056	San Joaquin	Baileys Nursery Inc	20066 N Kennefick Rd Acampo CA 95220	
20)	017-014-057	San Joaquin	Daniel L & Engracia C Ramirez	20066 N Kennefick Rd Acampo CA 95220	
21)	017-014-058	San Joaquin	Pauline M Meyer	6233 E Woodbridge Rd Acampo CA 95220	
22)	017-014-059	San Joaquin	Allen L & Sandra J Becker	6231 E Woodbridge Rd Acampo CA 95220	
23)	017-014-062	San Joaquin	George & D Floyd	6565 E Woodbridge Rd Acampo CA 95220	
24)	017-014-065	San Joaquin	Robert K & Rose K Sasaki	6230 E Dougherty Rd Acampo CA 95220	

51)	049-111-002	San Joaquin	Jane C Vollbrecht	6195 E Sargent Rd Lodi CA 95240	
52)	049-120-030	San Joaquin	All State Packers Inc	6011 E Pine St Lodi CA 95240	
53)	049-120-033	San Joaquin	All State Packers Inc	6097 E Pine St Lodi CA 95240	
54)	049-120-042	San Joaquin	Sherrell C McManus	816 Calle Pluma San Clemente CA 92673	
55)	049-130-001	San Joaquin	Victor War Games Inc	18023 N Kennison Lane Lodi CA 95240	
56)	049-130-024	San Joaquin	James M & Janice I Miller	17519 N Kennison Ln Lodi CA 95240	
57)	049-130-046	San Joaquin	Julie A Estridge	18695 N Kennison Ln Lodi CA 95240	
58)	049-130-060	San Joaquin	William F & Marian S Johnson	17307 N Kennison Ln Lodi CA 95240	
59)	049-190-013	San Joaquin	Gary Archer	247 Commerce St Lodi CA 95240	
60)	049-190-016	San Joaquin	William & Rebecca Dolstra	1355 E Lodi Ave Lodi CA 95240	
61)	049-190-017	San Joaquin	Carl & Bertha Schneider	270 Commerce St Lodi CA 95240	
62)	049-190-018	San Joaquin	John & Vicki Vitale	248 Commerce St Lodi CA 95240	
63)	049-190-044	San Joaquin	Jerico & Toby Chandler	271 Guild Ave Lodi CA 95240	
64)	049-190-045	San Joaquin	Ledbetter Farms Inc	1377 E Lodi Ave Lodi CA 95240	
65)	049-250-004	San Joaquin	Donald Meyers	5990 E Sargent Rd Lodi CA 95240	
66)	049-250-015	San Joaquin	Certainteed Corp	300 Beckman Road Lodi CA 95240	
67)	049-250-017	San Joaquin	Edna H Pagel Inc	1150 Thurman St Lodi CA 95240	
68)	049-250-018	San Joaquin	Schaefer Systems LLC	1250 Thurman St Lodi CA 95240	
69)	049-250-019	San Joaquin	Pacific Coast Producers Corp	650 S Guild Ave Lodi CA 95240	
70)	049-250-062	San Joaquin	Wayland & Sharill Irby	PO Box 3006 Lodi CA 95241	
71)	049-250-063	San Joaquin	Pacific Coast Producers Corp	PO Box 1600 Lodi CA 95241	

CITY OF LODI

LEGAL NOTICE INSTRUCTIONS

SUBJECT: 1) Calpeak Legal Notice
2) Water Well 26

PUBLISH (DATES): Saturday, November 30, 2002

TEAR SHEETS WANTED: 1 EXTRA (ONLY) DELIVER TO: Planning Department

AFFIDAVIT & BILL TO: City of Lodi, 221 W. Pine Street, Community Development Department

DATE: November 27, 2002

ORDERED BY: Konradt Bartlam

TITLE: Community Development Director

Fax: 369-1084

Call Lisa Wagner at 333-6711 if you have questions.

Faxed 11/27/02

LW Document13

LEGAL NOTICE

NOTICE OF PUBLIC HEARING BY THE CITY COUNCIL OF THE CITY OF LODI TO CONSIDER THE CERTIFICATION OF A MITIGATED NEGATIVE DECLARATION FOR THE CALPEAK POWER – MIDWAY, LLC LODI ELECTRICAL ENERGY FACILITY.

NOTICE IS HEREBY GIVEN that on Tuesday, the 10th day of December, 2002, at the hour of **7:00 a.m.**, or as soon thereafter as the matter may be heard, the Lodi City Council will conduct a Special Public Hearing in the Carnegie Forum, 305 West Pine Street, Lodi, California, to consider:

The construction and operation of a nominal net 49 megawatt (MW) "simple-cycle" power plant referred to as Lodi Electric Energy Facility (LEEF). The plant will be constructed on property owned by the City of Lodi located at 1215 East Thurman Street, east of State Highway 99. The parcel (Assessor's Parcel Number 049-250-13) is approximately 8.1 acres and the plant will occupy a two-acre portion of the parcel. The property is located within the Heavy Industrial (M-2) zoning district. Two natural gas pipeline alternatives were evaluated both of which are low pressure gas pipelines interconnecting into Pacific Gas & Electric (PG&E) gas pipeline #197. Gas pipeline alternative Route 1 was identified as the preferred route. No electrical transmission facilities will be required. The LEEF will connect directly to the Fred M. Reid Industrial Substation, which is located on the same City-owned parcel as the proposed power plant facility.

Information regarding this item may be obtained in the office of the Community Development Director at 221 West Pine Street, Lodi, California, or by phoning (209) 333-6711. All interested persons are invited to present their views either for or against the above proposal. Written statements may be filed with the Community Development Director at any time prior to the Hearing scheduled herein and oral statements may be made at said Hearing.

If you challenge the PROJECT in Court, you may be limited to raising only those issues you or someone else raised at the Public Hearing described in this notice, or in written correspondence delivered to the Community Development Director at, or prior to, the Public Hearing.

By Order of the Lodi City Council

Konradt Bartlam
Community Development Director

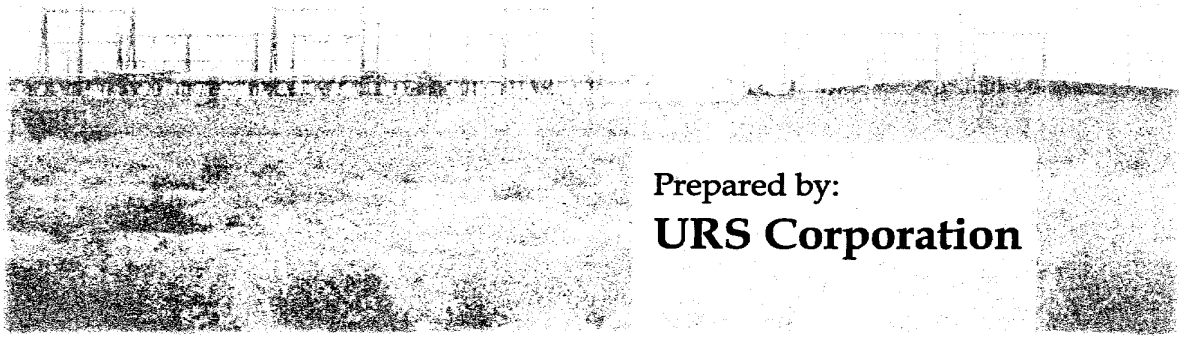
Dated: November 27, 2002

filed 12-10-02

CalPeak Power - Midway, LLC
Lodi Electric Energy Facility

Final Mitigated Negative Declaration

Lead Agency:
City of Lodi



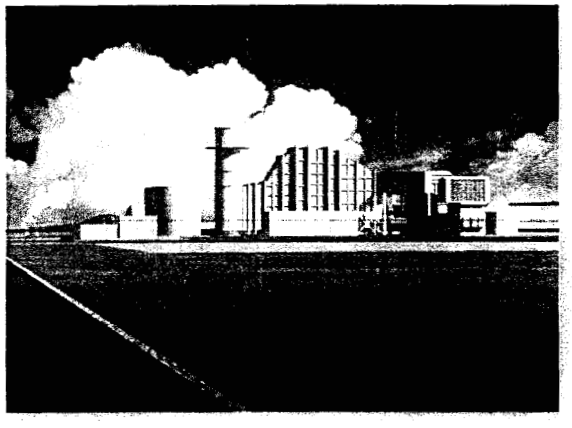
Prepared by:
URS Corporation

DECEMBER 2002

filed 12-10-02

CalPeak Power - Midway, LLC
Lodi Electric Energy Facility

Final Mitigated Negative Declaration



Lead Agency:

City of Lodi

221 W. Pine St.

Lodi, California 95241-1910

Prepared by:

URS Corporation

130 Robin Hill Road, Suite 100

Santa Barbara, CA 93117

URS

DECEMBER 2002

Section **Page**

List of Tables

List of Appendices

1.1 PROJECT OVERVIEW

CalPeak Power – Midway, LLC (CalPeak Power) proposes to construct and operate a nominal net 49 megawatt (MW) "simple-cycle" power plant referred to as Lodi Electric Energy Facility (LEEF). The plant will be constructed on property owned by the City of Lodi located at 1215 East Thurman Street, east of State Highway 99. The parcel (Assessor's Parcel Number 049-250-13) is approximately 8.1 acres and the plant will occupy a two-acre portion of the parcel. The property is located in an industrially zoned portion of the City of Lodi. A project location map and site plot plan are provided in Appendices A and B, respectively.

CalPeak Power will own and operate the power plant. It is anticipated that the plant will operate intermittently and operation will not normally exceed 16 hours per day and six days per week during peak demand months of January, February, June, July, August, September, October, and December.

Two natural gas pipeline alternatives were evaluated in the draft IS/MND, both of which are low pressure gas pipelines interconnecting into Pacific Gas & Electric (PG&E) gas pipeline 197. These two gas pipeline routes were referred to as Gas Pipeline Alternative Routes 1 and 2 in the draft IS/MND. For the final MND, Gas Pipeline Alternative Route 1 has been changed to the Preferred Route (Western Route) and Gas Pipeline Alternative Route 2 has been changed to the Alternative Route (CCT Route). The CCT Route was not chosen as the Preferred Route for the following reasons:

- Technical difficulties due to length of bore under the Mokelumne River
- Greater potential for frac-out from directional drill
- Higher expense of directional drill
- Potential loss of cathodic protection and/or other potential disturbance issues as a result of the possible future development for transportation that could include pedestrian/bike trails or electric-powered light rail system along CCT Railroad easement

A metering and pig launching facility will be required as part of the pipeline construction. The facility will be used to periodically maintain and inspect the pipeline. Two locations for the facility have been identified in this document. See Appendix C. The selection of the final location will be dependent upon ongoing landowner negotiations. A pig receiving facility will be located at the plant site. See Site Plot Plan in Appendix B.

No electrical transmission facilities will be required. The LEEF will connect directly to the Fred M. Reid Industrial Substation, which is located on the same City-owned parcel as the proposed power plant facility.

Construction is planned for a two-to-four-month period during the first and second quarters of 2003, and commercial operations are planned to begin in June 2003.

Organization of This Document

The remainder of Section 1 provides an overview of the regulatory review process for the LEEF. Section 2 describes the LEEF project benefits. Section 3 provides a description of the LEEF project. Section 4 provides the mandatory California Environmental Quality Act (CEQA) Initial Study/Mitigated Negative Declaration (IS/MND). Figures, maps, and other supporting documents are provided in Appendices.

1.2 PROJECT REGULATORY APPROVAL PROCESS

CEQA Lead Agency and Land Use Approval

CalPeak Power is the project applicant and the City of Lodi is the lead agency for the purposes of CEQA. In conformance with §15070 subsection (a) of the State CEQA Guidelines, the City prepared an Initial Study/Draft Mitigated Negative Declaration (IS/DMND) for the project, dated October 2002. The purpose of the DMND was to determine the potential impacts associated with the LEEF project and incorporate mitigation measures into the project design, as necessary. Implementation of such mitigation measures would reduce any potentially significant impact to insignificant levels. As provided for by CEQA §21064.5, a MND may be prepared for a project when an IS indicates that a project could have an adverse impact on the environment, but that revisions in the project design have been made to ensure that no significant adverse effect on the environment would occur.

The draft document was prepared, circulated for comment, and is completed in this final MND. The circulation of the draft MND resulted in comments from several federal, state, and local agencies and one landowner being provided. These comments, along with the responses prepared, are part of the City of Lodi administrative record. No new significant findings were identified due to comments received, therefore staff recommends certifying this final MND.

Upon consideration of the final MND and the Mitigation Monitoring and Reporting Program, the City of Lodi will make mandatory CEQA findings, and make a decision to approve, deny, or modify the project, during the Lodi City Council meeting to be scheduled during December 2002.

Responsible Agency Review

This final MND is intended to be used by responsible and trustee agencies that may have review authority over this project, and for all state and local governmental approvals that may be needed to construct and operate the project, whether explicitly listed or not. CalPeak Power will obtain any necessary permits from these agencies, as appropriate.

Various agency reviews and/or permits will be required to accommodate the plant site and the pipeline route. Agencies with review and/or approval authority over various aspects of the project include:

- City of Lodi
- San Joaquin County
- San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) / California Air Resources Board (CARB)
- California State Lands Commission
- State Water Resources Control Board (SWRCB) and Central Valley Regional Water Quality Control Board (Region 5)
- California Reclamation Board
- California Department of Fish and Game
- Caltrans/U.S. Department of Transportation
- California Department of Health Services
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service (USFWS)
- Environmental Protection Agency (EPA) Region IX
- National Marine Fisheries Service

Air Permit

A New Source Review (NSR), Authority to Construct (ATC) application for this project has been submitted to the SJVUAPCD.

1.3 PUBLIC REVIEW PROCESS

In accordance with CEQA, a good faith effort was made to contact affected organizations, agencies, and individuals that may have an interest in this project. As part of the DMND a distribution/notification list was prepared.

The City of Lodi provided a notice of intent (NOI) to adopt a MND to property owners within 300 feet of the proposed plant site and to landowners located adjacent to the proposed pipeline route. For the portion of the pipeline located in San Joaquin County, the County's notification requirements were adhered to (typically this requires notification of properties within 1,400 feet of the right-of-way). The notice was also published in the Lodi News Sentinel newspaper and posted with the San Joaquin County Recorder. The draft document was made available at the Lodi Public Library.

A 30-day review period and comment period was established, in accordance with §15105(b) of the CEQA guidelines. Following the close of the public comment period, the City of Lodi considered the draft MND and comments in evaluating the proposed project and appropriate conditions of approval. An approval determination will be made at the publicly noticed City of Lodi Council hearing.

The final MND will be made available for public review at the Lodi Public Library. The City Council hearing will be noticed in the Lodi News Sentinel 10 days prior to the hearing.

Questions regarding the process can be directed to:

Mr. Konradt Bartlam
Community Development Director
City of Lodi
221 West Pine Street
Lodi, CA 95241-1910

2.1 PROJECT BENEFITS

California's electricity supply problems are well documented. A clear need exists for peak-load and intermediate-load power generation and transmission. This facility will be adjacent to the Fred M. Reid Industrial Substation located on the same site. Under normal circumstances, the plant will sell electricity under contract to the California Department of Water Resources. Building this power plant will ensure a more reliable supply of electricity for the City of Lodi, and will reduce cumulative demands on the regional electricity grid.

This section describes construction, design, and operations features of the proposed power plant. This section also describes construction and operations related to supporting facilities including fire protection, water, wastewater, electrical transmission, and gas transmission.

3.1 POWER PLANT DESCRIPTION

3.1.1 Plant Site Information

The plant site is located within the City of Lodi, at 1215 East Thurman Street. The 1215 East Thurman Street property covers 8.1 acres in an industrial park on the eastern side of the City. The center of the power plant site is one-third of a mile east of Highway 99 and Beckman Road, 600 feet south of Lodi Avenue, 800 feet west of Guild Avenue, and 150 feet north of Thurman Street. A project location map is provided in Appendix A.

The LEEF will be constructed on a two-acre site that is located on the southeastern corner of the property. The Thurman Street property currently contains the Fred M. Reid Industrial Substation on the northern half of the property and the City of Lodi Water Well 4R facility on the southwestern portion of the property. During construction of the power plant approximately two acres of the adjacent City-owned property at 1335 Thurman Street (currently vacant) will be used as a construction laydown area and a temporary soil stockpile area. A site plot plan is provided in Appendix B; this figure illustrates the power plant layout and adjacent staging areas. Appendix C provides three-dimensional views of the plant. Appendix D provides visual simulations of the power plant as viewed from Beckman Road, Lodi Avenue, Guild Avenue, and Thurman Street.

3.1.2 Plant Design Overview

General

The proposed power plant will be based on the Pratt & Whitney Power Systems (PWPS) FT8 gas turbine technology (see Appendix E). The plant will consist of one PWPS FT8 SwiftPac 50 (SP50) gas turbine generator unit nominally rated at 49 MW. The SP50 unit contains two FT8-2 combustion turbines driving a single electric generator; the turbines are coupled to each end of the generator. The PWPS FT8-2 combustion turbines are natural gas-fired engines equipped with Dry Low nitrogen oxide (NO_x) (DLN) combustion burners to improve exhaust gas emissions. This SP50 unit will be operated in simple-cycle mode with the unit exhausting into a selective catalytic reduction (SCR) and catalytic oxidation system, which further reduces emissions of NO_x and carbon monoxide (CO). The electrical power generated by the plant will be transmitted to the Fred M. Reid Industrial Substation, which serves as a connection to the Cal Independent System Operator (ISO) grid.

Natural gas will be used as the fuel source for the FT8 combustion turbines. There are two proposed routes for supplying natural gas to the plant. The Preferred Route, hereinafter referred to as the "Western Route," would be a new gas pipeline from the plant site that interconnects with PG&E's gas line 197 at mile marker 3.07, north of the plant site (see Appendix A). This pipeline would deliver gas at approximately 200 pounds per square inch gauge (psig). Inside the power plant, a gas compressor would be used to increase the gas fuel pressure to the operating conditions required by the combustion turbines.

The Alternative Route, hereinafter referred to as the "Central California Traction (CCT) Route," would be a new gas pipeline from the plant site that interconnects with PG&E's gas line 197 at mile marker 3.0, within the CCT right-of-way northeast of the plant site (see Appendix A). This alternative would also use a gas compressor at the plant site to increase the gas fuel pressure to that required to operate the turbines. This alternative would deliver natural gas to the facility at approximately 200 psig. A metering and pig launching facility will be constructed at the PG&E tie-in. This facility will be used for periodic maintenance and inspection of the pipeline.. Maintenance of the pipeline is anticipated to occur approximately one to three times per year, depending on operations. Inspection is expected to occur approximately once every five years. Additional pipeline information is provided in Section 3.2.

In the event that the natural gas pipeline construction is not complete by June 1, 2003, the facility will be temporarily fueled using liquefied natural gas (LNG). The LNG will be stored onsite in three 10,000-gallon tank portable LNG trailer systems, and piped into the plant's natural gas supply system. It is anticipated that this temporary fuel source will be needed for a period of two to three months. During that period, it is estimated that delivery of LNG to the site by tanker truck will occur five times per day. See Appendix F for an LNG system overview. LNG trailers will likely be located immediately east of the turbines in a portion of the plant site that is not proposed for permanent plant equipment. The precise location and operation of the LNG trailers will be determined during final design and will comply with setbacks from the public street and other equipment, as well as comply with other applicable health and safety standards, as specified in National Fire Protection Association (NFPA) 59A. Specific provisions of NFPA 59A are included in Appendix F.

In order to maintain power output during high ambient temperature periods, the FT8 combustion turbines are fitted with an inlet fogging system to cool the turbine inlet air, thereby increasing air flow and power output. The proposed inlet fogging system uses demineralized water sprayed and subsequently evaporated into the air stream to lower the temperature, thereby creating no water discharge. The fogging system will use approximately 14 gallons per minute (gpm) (7 gpm per engine) of demineralized water on average during operation. This water will be demineralized from the City supplied water via a leased mobile demineralization trailer. The demineralizer trailer will be regenerated offsite approximately

three times each month. Trailer regeneration will depend on factors such as the number of operating hours and the incoming water quality. The demineralized water produced will be stored in a 47,000 gallon demineralized water storage tank prior to use. The City water will be supplied from the City water system, primarily from the adjacent City Well 4R.

The power plant is to be designed using Best Available Control Technology (BACT) for the SJVUAPCD. The plant will use a SCR for NO_x emission reduction and a catalytic oxidizer to control CO emissions. The SCR process is a proven technology to reduce NO_x emissions by distributing aqueous ammonia over a catalyst bed to reduce the NO_x to nitrogen and water, while the CO catalyst will reduce the CO emissions. A Continuous Emissions Monitoring System (CEMS) will also be provided to sample and record stack emissions. The SCR catalyst requires a 19% aqueous ammonia solution for proper operation. This ammonia will be stored in a 12,000-gallon storage tank with secondary containment system. This containment system includes an ammonia pit to collect any leaks from the tank or from unloading operations.

The SP50 generator unit produces an output voltage of 13.8 kilovolts (kV). A step-up transformer will be used to increase this voltage to the necessary 60 kV or 115 kV for electrical interconnection to the Fred M. Reid Substation.

Electrical Interconnection

The physical electrical interconnection for the LEEF will be to the existing substation, as shown in Appendix B. No new electrical transmission lines are required for this project. The Fred M. Reid Industrial Substation interconnects to the PG&E transmission system on three 60 kV transmission lines. The City of Lodi will provide temporary construction and standby power.

Gas Interconnection

Natural gas will be supplied via a new eight- to ten-inch diameter gas pipeline serving the facility by either the Preferred Western Route or Alternative CCT Route, each of which would be able to provide 200 psig of pressure. Additional pipeline information is provided in Section 3.2.

Water Supply

The City of Lodi will supply raw water of approximately 20 gpm on an annual average, of which approximately 14 gpm of demineralized water will be used for inlet fogging.

Process and Storm Water Discharge

All contaminated waste drains from the engine enclosures, generator enclosure, hydraulic start pac, and the instrument air skid will be piped to and collected in a 2,800-gallon wash-down drainage storage tank. This waste will be removed via a wastewater truck and sent to the appropriate facility as needed. There will be no wastewater discharge from the demineralizer trailer.

The storm drains from the transformer containment areas as well as the site storm water drainage from operational areas will be directed to an oil/water separator. The treated storm water from the oil/water separator will then be piped into the City sanitary sewer system (this may require using a lift station) in accordance with an Industrial Wastewater Permit to be issued by the City. Under normal operations, oily waste should never collect in the oil/water separator; however, there is a chance that oil may enter the oil/water separator. Any oil that does collect in the oil/water separator will be removed by a vacuum truck and taken to the appropriate facility. Storm water in the non-operational areas (e.g., access roads, landscaped areas, and other open areas outside the equipment areas) will drain to the City storm sewer system drain inlets located on Thurman Street.

Water discharges associated with plant construction are discussed below in Section 3.1.4. Hydrostatic test water associated with pipeline construction is discussed below in Section 3.2.3. These activities will be controlled through appropriate plans and permits, as discussed below.

Hydraulic Start System

A hydraulic start pac skid will be used to supply filtered, de-aerated hydraulic fluid under high pressure (~5,000 pounds per square inch [psi]) to the turbine-mounted hydraulic starting motor. The hydraulic start pac skid includes a storage tank and electric motor driven pump, as well as necessary instrumentation and controls.

The hydraulic start system consists of a factory-assembled skid, interconnecting piping and an engine mounted hydraulic starting motor. This starting motor accelerated the gas turbine to the required speed for light-off at which point the hydraulic starting system operation is halted.

Natural Gas Compressor Skid

Natural gas is supplied as the primary fuel source for the combustion turbine generator (CTG). If the natural gas supplied to the plant is at a pressure lower than that required by the

turbine manufacturer, a gas compressor is used to increase the gas fuel supply pressure to the turbine. The LEEF will use a skid-mounted compressor to increase the pressure to 500 psig.

Fire Safety Systems

The SP50 FT8-2 gas turbine enclosures are monitored and protected by a carbon dioxide fire suppression system. Portable fire extinguishers will be provided at key locations around the plant.

The plant will have a fire control system that is connected to the city water supply. The water supply system will meet City of Lodi standards, and the number and location of hydrants will meet Fire Marshal approval.

3.1.3 Additional Design Details

Emission Control

The FT8-2 engines are equipped with DLN combustion burners to reduce engine emissions.

The power plant will also use a SCR/CO catalyst to further reduce emissions of NO_x and CO. The SCR process requires the injection of aqueous ammonia onto a catalyst for proper NO_x reduction to nitrogen and water vapor. The ammonia slip will be controlled to less than 10 ppm of ammonia in the exhaust gases exiting the stack. The SCR catalyst system reduces NO_x emissions from 39 parts per million (ppm) at the inlet to the SCR to 3.0 ppm at the stack outlet. The SCR catalyst requires a supply of aqueous ammonia (19% ammonia and 81% water solution). This aqueous ammonia used for injection will be stored in a 12,000-gallon storage tank and containment area. An injection control skid will be used to heat the aqueous ammonia and mix this vapor with dilution air. This air/ammonia mixture is then injected into the exhaust gases flowing to the SCR catalyst. The aqueous ammonia system will meet all requirements as well as dilution and containment criteria as set forth in California Fire Code and NFPA Fire Codes.

Low sulfur content natural gas will be the fuel source for the power plant. Thus the combustion turbines, with proper combustion and successful operation of the DLN burners, will be clean burning, resulting in low levels of sulfur dioxide and particulate matter emissions, as well as reduced emissions of NO_x and CO.

Plant Performance

The following plant performance data summarizes power plant operation at average site conditions (60°F, 61% RH). The complete process flow diagram for these conditions can be found in Appendix G.

TABLE 3-1
SUMMARY OF PLANT PERFORMANCE DATA

Gross Power:	51,007 kW
Gross Heat Rate:	9,111 Btu/kW-hr (LHV = 20,560 Btu/lb)
Plant Fuel Flow Rate:	465 MMBtu/hr
SwiftPac Aux. Loads:	136 kW
Exhaust Gas Cooling Air Blowers:	225 kW
Natural Gas Compressors:	900 kW
Other Auxiliary Loads:	339 kW
Misc. Losses/Loads:	100 kW
Total Parasitic Aux. Loads:	1,700 kW
Net Power:	49,307 kW
Net Heat Rate:	9,425 Btu/kW-hr

3.1.4 Plant Construction

Plant construction will take place over approximately a two- to four-month period during the first and second quarters of 2003.

Construction activities will include:

- Ground clearing
- Site preparation (cut and fill, soil compaction)
- Installation of underground utilities
- Civil construction, foundations, and drainage systems
- Building installation
- Equipment installation
- Ancillary structures (aboveground tanks, curbing)
- Paving, ground surfaces, and landscaping
- Security systems installation

Construction equipment staging and temporary soil storage will occur on an approximately one-acre portion of the adjacent City-owned parcel located immediately east of the project site, as shown in Appendix B. Construction workers will park along Thurman Street and/or a portion of the adjacent City-owned property.

Construction vehicles will reach the site via State Highway 99, to Beckman Road, to Thurman Street, and enter and exit the site from Thurman Street. Approximately 89 skilled and unskilled construction workers will be onsite during peak construction (daily average of approximately 50 workers). Construction is expected to take place Monday through Saturday from 7 a.m. to 7 p.m. Under some circumstances, extended hours and/or weekend construction may be necessary. A summary of heavy equipment to be used during plant construction is provided in Table 3-2.

TABLE 3-2
PLANT CONSTRUCTION EQUIPMENT USAGE

Equipment	Number	Weeks Onsite
Site Preparation and Grading		
Dozer***	1	1
Compactor**	1	1
Motor Grader**	1	1
Water Truck**	1	1
Dump Truck (2 ton)**	1	1
Pickup Truck***	1	1
Sub-total	**6**	**6**
Foundations		
Excavator***	1	2
Backhoe/Loader***	1	2
Concrete Transit Mixer*	1	2
Forklift***	1	2
Air Compressor***	1	2
Dump Truck (10 cy)**	1	3
Welding Machine**	1	2
Dump Truck (2 ton)**	1	3
Cherry Picker (15 ton)***	1	2
Pickup Truck***	1	3
Sub-total	**10**	**23**
Balance of Plant		
Forklift***	1	11
Crane (125-ton)***	1	1
Crane (25-ton)***	1	7
Air Compressor***	1	12
Cherry Picker (15 ton)***	1	12
Welding Machine***	1	12
Dump Truck (2 ton)**	1	11
Pickup Truck***	1	12
Sub-total	**8**	**78**

Equipment utilization is assigned as follows: * = 10%; ** = 25%; *** = 50%.

* As necessary to complete site work

Construction Storm Water Management

Storm water runoff during construction will be managed under a General National Pollutant Discharge Elimination System (NPDES) Permit for Construction Activities and Storm Water Pollution Prevention Plan (SWPPP), which will be developed by CalPeak prior to construction. This plan will be developed for both the plant site, construction equipment and soil staging area, and the pipeline construction disturbance areas.

3.2 OFFSITE LINEARS

No offsite linears are required for water, sewer, or electrical transmission. A water supply connection will be provided by a tie-in to the existing City Well 4R, located on the same parcel as the proposed plant. Sewer and storm water connections will be provided by a tie-in to existing City sewer and storm water systems located on Thurman Street, immediately adjacent to the project site. Electric transmission will tie into the Fred M. Reid substation, located on the same property as the project.

Two natural gas pipeline routes were analyzed for this project. For either the Western Route or CCT Route, an eight- to ten-inch diameter coated steel pipe will be used and cathodic protection will be incorporated. The pipeline will be constructed in accordance with accepted practices and applicable industry standards. The details are described below.

The pipeline routes were selected based on consideration of the following criteria, in order of importance and to the extent feasible:

- Minimize conflicts with residential land uses and related infrastructure (i.e., noise, visual resources, disruption resulting from construction, safety, utility conflicts, and landscaping)
- Minimize disruption to structures and facilities on private land
- Minimize effects on sensitive natural resources (e.g., wetlands and vernal pools, riparian habitats, streams and sloughs, native oaks, endangered species, air quality) and cultural resources (historical sites, archeological sites)
- Minimize effects on permanent agricultural production (e.g., vineyards and orchards)
- Minimize effects on other agricultural uses (e.g., row crops)
- Minimize the number and length of water crossings

- Minimize the length of pipeline and number of turns

3.2.1 Preferred Gas Pipeline Route (Western Route)

The Western Route, a low pressure gas pipeline approximately three miles in length will be constructed from the plant site to the existing PG&E gas pipeline 197, located in San Joaquin County. A skid-mounted compressor will be provided at the plant site to increase the gas pressure supplied by the pipeline to 500 psig. A natural gas shut-off valve, filter/separator, and metering and pig launching facility will be located at either the Thomas property (APN 017-080-54) or the Corda property (APN 017-080-64). The determination of the final site location is subject to current landowner negotiations. See Appendix C. A pig receiving facility will be located at the plant site. See Site Plot Plan in Appendix B.

The Thomas property (APN 017-080-54) is located approximately 600 feet south of the PG&E tie-in. A 0.08-acre portion of this property will include a fenced area 30 x 110 feet located in the northeast corner of the parcel, adjacent to the Highway 99 frontage road. The Corda property is located north and adjacent to the PG&E tie-in. PG&E pipeline 197 parallels the southern boundary of this property. A 0.12 acre portion of this property will include a fenced area 30 feet by 110 feet located in the southwest corner of the parcel, adjacent to Highway 99.

The enclosed area will include a metering facility to be operated by PG&E and a pig launching facility to periodically inspect and maintain the pipeline, operated by CalPeak Power. A location map and preliminary rendering of these facilities is provided in Appendix C. The final facility design will be developed in coordination with PG&E, the landowner, and San Joaquin County.

The metering facility will consist of 6- or 8-inch diameter aboveground piping, supported on a concrete slab and steel piers. The pig launching facility will consist of 10-inch diameter piping, 3 feet above ground, supported on engineered concrete piers. The two facilities will be surrounded by a common 6-foot high chain link fence; each of the facilities will be separated by an interior fence. A driveway will provide access from the County frontage road. Operations and maintenance vehicles will park inside the fenced area.

Neither of the site locations are within a 100-year floodplain. The Thomas property site is on level terrain and is currently in grape production. At this location, the facility will permanently displace approximately 0.08 acres of agricultural land. The Corda property is also on level terrain that is disked annually. At this location, the facility will permanently displace approximately 0.12 acres of fallow land.

Construction and operation of the facilities will not require water, sewer, or storm water connections. The enclosed area will be surfaced with gravel and storm water will be allowed to percolate into native soils onsite. The driveways will be asphalt or graveled. Operations will not involve fluids that could potentially spill to the ground.

In the event that the pipeline needs to be purged, a blowdown valve will be installed at either of these locations. A purge would occur in one of two instances: 1) an emergency situation and 2) replacement or repair of a portion of the pipeline.

PG&E will provide power (household single phase 110 service) to the facility via an existing power pole on the County frontage road. A new utility pole may be required inside the fence, depending on the final design configuration. Should a new utility pole be required, it will be approximately 20 feet high and six inches in diameter.

The Western Route traverses a combination of public roadways and private land between the plant site and the PG&E gas pipeline. The Western Route will be approximately three miles in length. The route will extend northwest and then north from the plant site along paved or dirt roads that traverse residential, industrial, and agricultural lands. From the proposed plant site, this gas pipeline route will follow Cluff Avenue north for 1.2 miles to Turner Road. This area is an industrially developed area.

The pipeline route will continue west on Turner Road for an estimated 300 yards before turning north and extending to the Mokelumne River. The riparian corridor of the Mokelumne River will not be impacted due to the use of horizontal directional drill techniques, which will reach a depth of 50 feet below the bottom of the streambed. The drill entry and exit will be placed no closer than 250 feet from the river's edge.

Once across the river, the pipeline route will continue north through a vineyard until reaching Clarksdale Road. The route will follow Clarksdale Road 0.4 mile west and then head north along the frontage road of Highway 99. The pipeline will tie into PG&E gas pipeline 197 at mile marker 3.07.

3.2.2 Alternative Gas Pipeline Route (CCT Route)

The CCT Route will be approximately three miles in length and will extend east and then north from the plant site through public and private paved or dirt roads, and primarily within the CCT Railroad right-of-way. From the proposed plant site, the CCT Route will parallel Lodi Avenue following the CCT tracks (on the south side of the tracks) east approximately 0.5 mile to Lodi Junction.

The route will turn north at Lodi Junction and extend an estimated 0.25 mile to Pine Street. Continuing north along the railroad tracks, the route will traverse a partially active agricultural field. The pipeline will be bored under Highway 12 and adjacent railroad tracks, and then continue north on the CCT Route to the riparian zone of the Mokelumne River. The riparian corridor of the Mokelumne River will not be impacted due to the use of horizontal directional drill techniques, which will reach a depth of 50 feet below the bottom of the streambed. The drill entry and exit will be placed no closer than 250 feet from the river's edge.

The CCT Route will continue to extend north, passing the Woodbridge Winery before intersecting with Woodbridge Road. After crossing Woodbridge Road, the route will remain adjacent to the CCT Railroad which parallels Kennefick Road. The pipeline will tie into PG&E gas pipeline 197 at mile marker 3.0.

3.2.3 Pipeline Construction

The gas pipeline from the plant site to the tie-in location (for either the preferred or alternative routes) will be installed using three types of construction. Most of the pipeline will be installed using traditional trenching techniques. Horizontal boring and hammering techniques will be used for road, rail line, and ditch crossings, and directional-drilling techniques will be used for the river crossing. The three pipeline laying systems could be employed concurrently on different portions of the line.

Construction is anticipated to progress at a rate of up to 0.35 mile per day in rural and agricultural areas, and at a rate of 0.15 mile per day in urban and industrial areas. An additional two to three days would be required to cross each intersection, roadway, canal, and irrigation ditch. Construction is anticipated to take approximately 10 weeks.

The construction right-of-way (ROW) will be approximately 30 to 50 feet wide except at road, rail, or river crossings where boring or directional drilling techniques will be used. These crossings will require an approximately 50-foot by 100-foot area on the south side for the boring or drilling operation. On the north side, work will be constructed in the ROW. A one-acre construction staging area will be required for temporary pipe and material storage and construction crew parking along the pipeline route (in addition to the plant area). The construction staging area will be graded as needed for equipment access. Materials will be loaded, unloaded, and stored, as necessary, to facilitate pipeline construction. The specific locations of construction staging areas will be negotiated with individual landowners. Every effort will be taken to minimize the impact on agricultural lands and open spaces.

Approximately 40 skilled and unskilled workers will be onsite during pipeline construction. A summary of heavy equipment to be used during pipeline construction is provided in Table 3-3.

Trellis and irrigation systems will be maintained to the extent feasible and returned to pre-construction condition upon completion of construction. After installation of the pipeline is completed, the ROW will be restored to its previous use, unless alternate arrangements are made with affected landowners.

TABLE 3-3
PIPELINE CONSTRUCTION EQUIPMENT USAGE

Equipment	Number
Excavator	1
Backhoes (rubber tire)	3-4
Drill rig	1
Side boom	2
Bending machine	1
Grader	1
Road repair equipment *	-

* As necessary to complete site work

Utility gas pipeline markers will be placed at road crossings, railroad crossings, and along public ROWs. Markers will be placed in locations that will not interfere with agricultural operations or ROW maintenance. Along extended stretches of road or railroad ROW, markers will be spaced at least every quarter to half mile.

The following sections describe the specific procedures that will be used for trenching, boring and hammering, and for directional drilling.

Pipeline Trenching: Routine Installation

Trenching will be performed using bucket-wheel ditchers or tracked or rubber-tired backhoes. To provide access for the construction equipment, gates will be installed in existing fences that cross the right-of-way. Following pipeline installation, gates will be removed and the fences repaired, minimizing disruption to agricultural operations.

If necessary, the right-of-way will be cleared and graded to remove obstacles and debris such as vegetation and rocks. It is anticipated that grading will be necessary in some agricultural areas to allow vehicles to maneuver. Grading activities will be performed in a manner that will minimize effects on drainage and irrigation patterns. Other activities in agricultural areas will include dust control and pest control measures.

The trench will be at least two feet wide. The pipeline would be buried in accordance with the U.S. Department of Transportation Standards (49 Code of Federal Regulations [CFR] 192), California Public Utility Commission (CPUC) mitigation standards, and local jurisdictional requirements. Generally, the pipeline will be buried at least four feet below ground surface. In some areas, the presence of underground facilities (e.g. water or sewer lines) substructures may necessitate burying the pipe deeper than four feet. The trench will be graded to allow clearance of at least one foot between the pipeline and any other underground facilities. Where the pipeline route crosses agricultural property, the pipeline will be placed approximately six to eight feet below existing grade unless an alternate depth is agreed to by the landowner. The easement will be accessed via an existing agricultural access road. When crossing irrigation or drainage ditches that are periodically dredged, the pipeline trench will be excavated to a depth that will permit safe dredging operations. In urban areas where the trench will be in or along a roadway alignment, the trench will be covered with steel plates at the end of each workday to provide increased safety and to facilitate the safe flow of traffic. The excavated soil will be maintained in stockpiles adjacent to the trench and used to backfill the trench following installation of the pipe.

All welding will be performed to the specifications of, and in accordance with, all applicable state and municipal ordinances, rules, and regulations, including American Petroleum Institute rule 1104 (Standard for Welding Pipe Lines and Related Facilities) and the rules and regulations of the U.S. Department of Transportation (49 CFR 192). As a safety precaution, at least one 20-pound, dry chemical fire extinguisher will be carried in each welding truck. All welds will be inspected radiographically and reviewed by a certified inspector before the field joint coating is applied.

The pipeline will be constructed of high-yield-strength steel pipe designed for pressures up to the maximum allowable operating pressure, and will be cathodically protected from corrosion. The pipeline sections will be coated at the mill before they are delivered to the construction site. However, it will be necessary to coat all joints, fittings, and bends in the field to provide continuous coating along the pipeline. After the pipe has been welded and inspected radiographically, a coating will be applied to all field joints.

A detection test will be conducted to locate any coating discontinuities that could permit moisture to reach the pipe. All coated pipes and field joints will be tested and repaired as necessary after the pipe is in place and before backfilling.

The trench will be filled using an angle-dozer or backfilling machine. The pipe will be first covered on all sides and the top with at least four inches of sand or 12 inches of soil to protect the pipe and coatings. The excavated soil material will be used to fill the trench. If needed, additional backfill will be purchased and transported to the site. The fill will be compacted using a roller or hydraulic tamper to minimize future settling.

All areas disturbed by construction will be restored. Restoration activities will begin as soon as the backfill operation is completed. All construction signs, surplus materials, and equipment will be removed from the right-of-way, and any remaining construction debris will be properly discarded. Damaged road surfaces will be temporarily paved to allow traffic movement to continue until permanent paving is installed as part of this project. In rural and agricultural areas, site restoration will include (as needed) replacement of topsoil, repair and reconstruction of irrigation and drainage facilities, payment for crop losses, special site enhancements needed to reestablish agricultural production, revegetation of disturbed natural areas, erosion control, and stabilization of soils. Specific restoration commitments for each parcel will be documented in the landowner/Applicant right-of-way easement agreement.

Directional Drilling: Installation Beneath River

Directional drilling will be used to cross the Mokelumne River at one location, as shown in Appendix A. The crossing profile and construction methods will conform to the rules and regulations as required, and recommended industry standards for pipeline safety.

Before construction begins at a crossing site, core samples will be obtained to a depth of approximately 100 feet below ground surface at selected intervals along the crossing alignment. These samples will be tested to determine the engineering properties of the soil. In addition, the channel bed at the crossing point will be surveyed and plotted. The drilling contractor will be provided with an engineered plan, including all pertinent geotechnical information, the results of the channel bed survey, and information pertaining to any future dredging by local agencies such that the depth of directional drilling can accommodate planned dredging activities.

During directional drilling, a portable drilling unit will be set up on one side of the crossing. The drill site staging area will be less than one acre. On the other side, a target area will be marked where the cutting head would exit. First, a small pilot hole will be drilled. For most subsurface soils, the cutting head will use pressurized water and drilling mud to bore the pilot hole. Drilling fluid pressure will be monitored closely to control drilling speed and hole size.

After the pilot hole is completed, a larger cutting head (reamer) and a pulling head will be attached to the drilling pipe. The drill pipe (now on both ends of the reamer and pulling head) will be pulled back from the targeted exit area along the path of the pilot hole. Once the reamer has been pulled through the hole, a swab will be pushed back through the enlarged hole. If the swabbing pass has gone well, a prefabricated and tested pipeline segment will be attached to the pulling head and pulled back through the hole. The ends of the pipeline segment will be prepared for tie-in to the adjacent segments of the pipeline.

Tanks and other equipment will be provided, as necessary, to contain all drilling fluids, cuttings, and similar materials used or generated during the drilling. Drilling fluids and cuttings will be disposed of offsite in accordance with local regulations. A detailed boring plan, including appropriate safety measures, will be developed for the crossing.

The Western Route and CCT Route will require a single directional bore under the Mokelumne River. Directional drilling will serve to avoid direct impacts to the river and the riparian corridor along the banks of the river that would otherwise occur from trenching. The directional drilling construction areas are sited in existing paved or dirt areas.

In the unlikely event that drilling fluids are released into the river as a result of an inadvertent return or "frac-out," which occurs when there is an uncontrolled flow of drilling fluid to the surface at the location(s) other than the entry or exit points, there could be temporary impairment to aquatic wildlife due to increased turbidity. Note that most frac-outs occur within the first 50 linear feet of the drill entry and exit points, which in this case would still be on land. Drilling procedures include various steps to prevent frac-outs from occurring, minimize them if they occur, and respond to frac-outs with appropriate contingency actions. Due to the potential for a frac-out into the Mokelumne River, a preliminary Frac-Out Contingency Plan has been prepared for the river crossing. This preliminary plan is based on plans employed by Lodi Gas Storage LLC during recent river and slough drilling projects in the vicinity of the LEEF pipeline route. A preliminary Frac-Out Contingency Plan for this project is included in Appendix H. The preliminary plan will be amended as appropriate when the detailed pipeline drilling plan and profile are available.

Boring and Hammering: Installation Beneath Railroads and Roads

A specialized construction crew will be responsible for all boring beneath roads, railroads, irrigation channels, and highways. The boring (auguring) and hammering method would be used in these areas. Bore pit dimensions would typically be 15 feet wide by 30 feet long by 8 feet deep.

The boring and hammering method involves using a boring and power unit mounted on rails to excavate a bore pit on one side of the crossing and a receiving pit on the other side. The power unit drives the auger inside a segment of heavy-wall pipe casing until the power unit reaches the leading edge of the bore pit. The power unit is then disconnected from the auger, backed up, and a segment of the pipeline is welded to the casing segment already driven. Additional auger and pipeline segments are added until the bore reaches the receiving pit on the other side of the crossing. The soil excavated by the auger is removed from the pit by a backhoe. The power unit then backs out the auger one segment at a time, leaving the pipeline in place under the crossing. The casing segment is removed and used at the next crossing.

Beneath railroad crossings, the pipe will be buried at least four feet below the bottom of the graded ditch on either side of the tracks. If required by the railroad that owns the crossing, steel or concrete casings will be installed around the pipe at each crossing, in accordance with the railroad company's specifications and the requirements of federal, state, and local agencies. Boring of each facility crossing will require approximately two to three days to complete.

Hydrostatic Testing

Federal requirements mandate hydrostatic leak testing of oil and gas pipelines before initial operation. The pipeline will be routinely tested. One hydrostatic test will be performed on the entire gas pipeline. Although a test duration of eight hours is required (49 CFR 192, California Government Code Section 5106-5109), the entire operation actually requires one to two 24-hour workdays to complete. A separate hydrotest will be conducted on the river crossing segment when that segment is completed.

During the hydrostatic test, a combination of City water and/or irrigation well water would be pumped into isolated pipeline segments. Using high-pressure test pumps, the pressure in the segments will be raised to the maximum design pressure of the line. Once the pipeline has passed the hydrostatic test, the water will be drained out of the system and tested for compliance with the NPDES and California Regional Water Quality Control Board (RWQCB) requirements. If necessary, the water will be treated before being discharged back into either an agricultural field, an agricultural well, or the City's municipal wastewater system.

3.3 PROJECT SCHEDULE

The plant and pipeline construction is scheduled to begin in March 2003. The plant is anticipated to begin commercial operation by June 1, 2003. Appendix I provides preliminary project schedule details.

3.4 OPERATIONS AND MAINTENANCE

3.4.1 Plant Operations, Maintenance, and Site Security

The LEEF will be unmanned and will be operated from a remote location. In the event that LNG is used onsite as a temporary fuel source, the facility will be manned as long as LNG is present. The plant perimeter fence will be of sufficient height and texture to prevent unauthorized entrance. Entrance gates will be locked, and warning signage will be posted on the perimeter fence. Entry to an operational plant will be restricted to authorized CalPeak Power personnel.

Aqueous ammonia deliveries are expected to occur approximately once every two months, for a total of one to two deliveries per year, assuming three months operation (~500 hours). A demineralizer trailer will make approximately two trips per month for a total of six trips per year, assuming three months operation (~500 hours). Additionally, if LNG is used to temporarily fuel the facility, an additional five LNG delivery trips per day will be required.

Maintenance will include equipment testing, monitoring, and repair, as well as emergency and routine procedures for service continuity and preventive maintenance. It is anticipated that routine maintenance and trouble-shooting will require weekly visits by one or more employees, and about four trips per year with a two- to four-person crew.

When occasional servicing or maintenance is required at night, work lighting will be within the screening fence. Fixed night lighting will be hooded and/or directed downward and inward toward the area to be illuminated.

3.4.2 Pipeline Operations and Maintenance

Once operational, the pipeline right-of-way will be visually inspected quarterly for encroachments and reduced cover. The cathodic protection test stations will be visited quarterly. A report summarizing the result of the inspections will be prepared and maintained by the operator. A "smart" pig will be used for periodic maintenance of the pipeline, as discussed further in the Horizontal Directional Drill Plan and included as a technical appendix to the final MND.

4.1 INTRODUCTION

CalPeak Power has prepared this final MND in order to assist the City of Lodi, as the CEQA Lead Agency, in identifying potential environmental impacts associated with the proposed project. The final MND provides a checklist for each resource topic, supporting explanations, and a discussion of mitigation measures that have been incorporated into the project design to minimize potential impacts for each resource area.

The resource topics considered in this final MND include:

- Aesthetics
- Agricultural Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Geology and Soils
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation / Traffic
- Utilities and Service Systems

4.2 AESTHETICS

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

Plant Site

a) and b) There are no scenic vistas or other scenic resources in the vicinity of the plant site.

c) There are no sensitive receptors (schools, scenic highways, parks, scenic vistas) within one-half mile of the proposed plant site. The overall visual environment is characteristic of an industrial park, consisting of an existing electrical substation facility, municipal water supply facility, plastic manufacturing operations, and commercial businesses. The proposed project site is owned by and located within the City of Lodi. The site is zoned Heavy Industrial (M-2) and is specified as land use Public/Quasi Public (PQP) in Lodi's General Plan. The surrounding properties are zoned Industrial and Public.

The proposed site is located on an eight-acre parcel with an existing substation located along the northern half of the property. The proposed plant would be constructed on approximately two acres. A few residences currently exist in an area zoned for heavy industrial use on Cluff Street, north of the plant site. The General Plan designation of the residences is General Industrial, and in the context of aesthetic resources, these residential uses are not considered to be impacted by further industrial build-out of the general area.

A facility site plan and three-dimensional models and visual simulations are provided in Appendices B, C, and D, respectively. Four plant features will be visible from either the north or south, including the 50-foot tall exhaust stack, the 20-foot tall demineralization water tank, the 41.5-foot tall SCR/CO housing, and the 11-foot tall inlet air filter housing. These facilities, while visible to the public, will not be in contrast to the existing visible structures associated with nearby industrial facilities such as Apache Plastics and the Sweetener Plant.

Perimeter fencing will be constructed. The perimeter fence will help shield the view from adjacent properties. The Thurman Street frontage will be landscaped in order to provide visual screening of the plant at ground level. Facility components will be color treated with a non-reflective color scheme. Except for the tallest components, the view from Highway 99 and residential/commercial areas west of Highway 99 will be screened by the existing Apache Plastics facility on Beckman Road.

Due to the existing industrial character of the plant site area, short-term construction of the proposed project will cause little or no adverse visual impacts to surrounding uses. Construction activities will be temporary (three months), and are not considered significant.

d) During construction, temporary use of construction lighting may be required, resulting in offsite glare. However, due to the short-term nature of construction and the existing industrial character of the plant site, short-term construction light/glare impacts are considered to be less than significant.

Project facilities will be color treated with non-reflective materials. Additionally, operations night lighting will be directed downward and inward toward the area to be illuminated in order to minimize nighttime light and glare. Although potentially contributing incrementally to overall industrial night lighting effects in the immediate area, the project will not create a substantial new source of light or glare.

Pipeline

Due to the flat nature of the terrain within the project area, the pipeline right-of-way will not be visually apparent, except for the absence of local vegetation around the immediate pipeline area. The pipeline will be buried primarily within county road and railroad rights-of-way. The potential impacts to viewers would be short term during the 10-week construction period. Residences and businesses located along the right-of-way could experience a temporary impact during pipeline construction. For those sensitive receptors, the route will be built at 0.35 mile per day in rural and agricultural areas. All disturbed areas will be

restored back to their pre-construction condition. The mitigation monitoring program will ensure long-term success of revegetation. Therefore, this impact is less than significant.

Permanent pipeline markers, required by the U.S. Department of Transportation, Office of Pipeline Safety (49 CFR 192), will be located at the edge of fields and at all road, railway, and water crossings to delineate the location of the pipeline. Markers for pipeline and other buried utilities are common elements throughout the project region; therefore, views of additional pipeline markers will not encroach on the agricultural character or degrade the visual quality of the region's rural views. This impact is less than significant.

Metering Station and Pig Launching Facility

A metering station and pig launching facility will be provided at the PG&E tie-in location. Two potential locations for this facility have been identified in this document. Both proposed locations are on the east side of the Highway 99 frontage road between Acampo and Woodbridge Road. The first of the two sites is located on the Thomas property (APN 017-080-54) and the second is located on the Corda property (APN 017-080-64). Both locations are visible to motorists as they travel along Highway 99 and the Highway frontage road. The overall visual environment is characteristic of the northern California Central Valley, consisting primarily of agricultural lands with flat terrain. See Appendix C.

The 0.08-acre of the Thomas property proposed to be used for the facility is currently in grape production. The residence on this property is 500 feet southeast of the proposed metering station location. The metering station will not be visible from the residence because trees and other vegetation screen the view. The impact will consequentially be less than significant.

The 0.12-acre portion of the Corda property proposed to be used for the facility is fallow land. The existing residence is located approximately 50 feet north of the proposed facility. In order to minimize the aesthetic impact of the metering station on the view of the landowner (due to the proximity of the facility to the residence), the project will implement landscaping design features to screen the facility from view of the residence. This measure will be incorporated into the project in accordance with the Mitigation Monitoring Program and Reporting Program and in coordination with the landowner, thereby effectively reducing the long-term visual quality impacts to less than significant.

The new utility pole that may be required to deliver electricity to the metering station will be approximately 20 feet in height. The existing distribution poles are approximately 30 feet in height, thereby the addition of another utility pole 20 feet in height, and of the same material, will not have a significant visual impact to the existing environment.

Summary of Aesthetic Resources Mitigation

The project design includes perimeter fencing and screening landscaping along Thurman Street at the plant site. Facilities will be color-treated with consistent, non-reflective paint tones. Operations lighting will be shielded to minimize offsite glare. Due to the existing visual character of the project area, the distance from residential receptors, and visual screening from Highway 99, the LEEF will not have a significant aesthetic impact.

The Mitigation Monitoring and Reporting Program will ensure that areas disturbed during pipeline construct are restored back to their pre-construction condition. Should the metering station and pig launching facility be located at the Corda property, it will be screened from the landowner view, in accordance with the Mitigation Monitoring and Reporting Program and the homeowner's preference.

4.3 AGRICULTURE RESOURCES

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☒	☐
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☒	☐
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	☐	☐	☐	☒

a-b) The proposed plant site is designated Urban and Built-Up Land on the State Important Farmland Map prepared by the San Joaquin Community Development Department. Therefore, no conversion of Prime Farmland to non-agricultural use will result from the development of the plant site.

Of the two pipeline routes that were studied for the fuel gas supply, only one will involve locating the gas pipeline in an Area of Prime Farmland. This area is minimized in the routing since most of the routing will be in the rights-of-way of existing roads and railroad easements. The Western Route will result in approximately 1.37 acres of Prime Farmland being placed in a utility easement for pipeline purposes.

The easement and subsequent placement of the pipeline will not convert Prime Farmland to non-agricultural use. The pipeline will be placed approximately six to eight feet below existing grade to allow for future agricultural uses of the easement area, unless an alternative depth is agreed upon with the landowner. In addition, the alignment of the easement within an existing agricultural area uses an existing agricultural access road to further minimize any impacts to agricultural land. The

construction of the pipeline will have temporary impacts to a small portion of the route within an existing agricultural operation. However, these impacts are minimized by locating the easement adjacent to the existing agricultural access road that can be used for construction and storage areas, and by implementing dust control measures. There are no long-term impacts anticipated to existing agricultural uses along the pipeline route or project site.

In addition to the plant site and pipeline, an above ground metering station is also proposed. The metering station is proposed to be located within APN 017-080-54, which is adjacent to Highway 99. The site is designated Prime Farmland and is currently in grape production. The metering station will include a 30-foot by 110-foot fenced area within the northeast corner of the parcel. This metering facility will result in the conversion of approximately 0.08 acres of Prime Farmland to a non-agricultural use. However, 0.08 acres is not a significant impact to agricultural resources, and the remaining area of the parcel will not be impacted by the construction or operation of the proposed above ground metering station.

The Corda property is not located on Prime Farmland. Therefore, there are no associated impacts to agricultural resources.

The Williamson Act establishes as state policy that state and local public utilities improvements shall "whenever practicable" not be located within agricultural preserves, or, when necessary to locate within agricultural preserves, not be located on lands under Williamson Act contract. The plant site is not currently under a Williamson Act contract and is zoned Industrial and designated PQP in the City of Lodi General Plan. The plant is owned by and located within the City of Lodi.

The gas pipeline routes are zoned Agriculture and a portion of the Western Route is under a Williamson Act contract. The proposed metering station site locations are not currently in a Williamson Act contract. Section 9-1810.3 of the Williamson Act, "Terms of Contract," outlines allowable uses for the properties under contract, including petroleum and natural gas extraction and utilities services. As a result, no conflict with the Williamson Act or agricultural zoning will result from the implementation of the proposed project.

c) The project will not involve other changes in the existing environment, that could result in the conversion of farmland to non-agricultural use.

Summary of Agricultural Resources Mitigation

Construction and operation of the proposed power plant and pipeline facilities will result in the conversion of 0.08 acres of Prime Farmland to a non-agricultural use. The layout and design of the plant and associated pipelines have minimized any potential impacts to existing and future agricultural uses within the area. The plant site and pipeline locations will allow the existing agricultural operations to continue with minimal impacts during construction and operation. Mitigation measures, including placement of the pipeline six to eight feet below existing grade, and incorporating existing farm roads into the easement locations, will ensure that impacts are minimized to the maximum extent feasible. Any loss of active crops during construction of the pipeline will be replaced, as appropriate. The location of the metering station at the Thomas property adjacent to Highway 99, will minimize any potential impacts to existing agricultural uses. The loss of 0.08 acres to a non-agricultural use is not a significant impact to existing agricultural resources.

4.4 AIR QUALITY

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☒	☐	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?	☐	☒	☐	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☒	☐	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒

a) The SJVUAPCD develops and implements Rules and Regulations that govern air pollution sources to ensure that air emissions from facilities do not adversely affect public health or the environment, and that air quality plan goals are implemented. New sources of air pollution must submit an application to the SJVUAPCD to ensure that the facility will be designed and operated in accordance with these strict air pollution control requirements. CalPeak has submitted an ATC and Permit to Operate Application for the project to the SJVUAPCD. As part of the SJVUAPCD permit process, an assessment demonstrating that the facility will comply with the SJVUAPCD Rules and Regulations will be performed by the SJVUAPCD. Compliance with these rules will ensure that the project will not conflict with or obstruct air quality plan goals.

b) The primary source of air pollutants from the facility is the combustion turbine, which combusts Public Utility Grade natural gas. The natural gas will come from one of two pipeline routes that will connect with PG&E's gas line 197. In the event that pipeline construction is not complete by June 1, 2003, the facility will be temporarily fueled using

LNG. LNG is natural gas; short-term use of LNG fuel will not result in an increase of emissions over natural gas. The LNG system components are designed to prevent fugitive emissions.

The quantity of air emissions from the turbine was calculated based on data provided by the turbine manufacturer. Manufacturers' data has been adjusted to account for installation of stringent emission control systems. The analysis of annual emissions is consistent with the proposed operating scenario of 4,866 hours per year, including operational flexibility over shorter periods to meet peak power demand. Actual operational hours will be dependent upon power needs subject to enforceable limits based on a 56% annual capacity factor (4,866 hours annually). Emission estimates are shown in Table 4-1 and are compared to SJVUAPCD major source thresholds. An estimate of the emissions from the facility, including a discussion of the impact quantification methodology, is presented in Appendix J.

TABLE 4-1
CRITERIA AIR POLLUTANT EMISSION ESTIMATE
FOR THE LODI ELECTRIC ENERGY FACILITY

	NO_x	VOC	PM_{10}	CO	SO_x
Annual Capacity Factor [1,2,5]					
Tons/yr	10	7	14.6	20	3
lbs/day[3]	151	36	144	154	29
Start-Up/Stop Emissions					
lb	1.3	11.9	2.2	15.1	0.3
Hourly Emissions, 100% load [4]					
Lbs/hr	6.3	1.5	6.0	6.4	1.2
SJVUAPCD Major Source Thresholds					
Tons/yr	25	25	70	100	70

1 Combustion turbine operates 4,866 hours with 608 total starts/stops assumed.
2 Start-up lasts 11.5 minutes.
3 Lbs/day assumes 24 hours operation.
4 Ambient temperature 60° F.
5 Includes start/stop emissions.

Emission controls will be installed to minimize air emissions to satisfy stringent BACT requirements. Based on installation of these controls, the project is not a major stationary source. As demonstrated in the SJVUAPCD ATC application, the facility will comply with all air quality rules and regulations. Further, it is anticipated that the SJVUAPCD conditional approval will contain emissions limits and monitoring requirements to ensure that the project will not contribute substantially to air quality violations.

Emissions of criteria pollutants from equipment planned to be used during the construction of the facility are addressed in Appendix J. An array of typical equipment and its expected utilization was developed based on the proposed three-month construction period. Emissions from this equipment were calculated using conservative emission factors published by the EPA and the projected operating time onsite for each piece of equipment. Emissions of all construction-related criteria pollutants are well below established significance thresholds, and are not expected to contribute substantially to any air quality violations. It is anticipated that construction emission mitigation measures will be incorporated into the conditions of the ATC issued by the SJVUAPCD.

c) The project will not result in a cumulatively considerable net increase of criteria pollutants for which the project region is in non-attainment. The proposed project will be operated in a manner that will ensure that emissions of NO_x, volatile organic compounds (VOC), and particulate less than 10 microns (PM_{10}) do not exceed the SJVUAPCD specified thresholds of 10 tons/year for NO_x and VOC, and 14.6 tons/year for PM_{10}. By operating at or below the regulatory threshold, no offsets or emission reduction credits for NO_x, VOC, and PM_{10} will be required, and the project will meet the SJVUAPCD requirements for no cumulative net increase in non-attainment criteria pollutant emissions.

d) The facility will comply with SJVUAPCD rules and regulations, which are designed to be protective of public health, including sensitive receptors such as children and the elderly. In addition, a health risk assessment has been performed. The conservative health risk assessment was prepared based on maximum anticipated emissions and local meteorological conditions. The assessment evaluated the potential for carcinogenic, chronic, and acute health risk impacts using established health risk assessment guidelines. Under various state and local regulations, an incremental cancer risk of 10-in-one-million as the result of a project is considered to be a significant impact on public health; a value of less than one-in-a-million is considered insignificant. The estimated health risk indicates that at the point of maximum potential impact, there is less than one-in-a-million carcinogenic risk and a hazard indice of less than one. A summary of the assessment is presented in Appendix J. Based on the health risk assessment and compliance with SJVUAPCD Rules, sensitive receptors will not be exposed to substantial pollutant concentrations.

e) No odors are anticipated from the facility during normal operations based on the combustion of low sulfur fuel. The only potential source of odor is the odorants contained in the natural gas that would only be present in the event of a gas leak. This is the same source of gas used in homes for cooking and heating. The odorants are added in trace quantities so that in the event of a gas leak, it can be readily detected.

Summary of Air Quality Mitigation

The LEEF will be designed, constructed, and operated in compliance with all applicable air quality rules and regulations. The SJVAUPCD develops and implements Rules and Regulations that govern air pollution sources in the project area to ensure that air emissions from facilities do not adversely affect public health or the environment. An ATC application has been filed with the SJVAUPCD to ensure that the facility will be designed and operated in accordance with strict air pollution control requirements.

The LEEF will be a new minor source, with emission rates for all criteria pollutants below major source emission thresholds. The proposed project will be operated in a manner that will ensure that emissions of NO_x, VOC, and PM_{10} do not exceed the SJVUAPCD specified thresholds of 10 tons/year for NO_x and VOC, and 14.6 tons/year for PM_{10}. By operating below the regulatory threshold, no offsets or emission reduction credits for NO_x, VOC, and PM_{10} will be required, and the project will meet the SJVUAPCD requirements for no cumulative net increase in non-attainment criteria pollutant emissions.

4.5 BIOLOGICAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Have substantial adverse effects, either directly or through habitat modifications, on any species identified as a candidate, sensitive or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☒	☐	☐
c) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☒	☐	☐
d) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan?	☐	☐	☐	☒

a–d) **Background**

Biological resources investigations for LEEF were conducted on August 2, September 7, October 15, 2001 and August 5, 2002. These were completed in order to map native habitats, document the occurrence of wildlife species, and to determine if any special-status plant or wildlife species are present at either the proposed plant site footprint or along the gas line routes. The biological investigation included a literature search for relevant site data and onsite biological resources surveys. The biological resources analysis included a walking survey, habitat mapping, plant species identification, and a search for wildlife species within the proposed impact area and adjacent areas out to approximately 500 feet. Human disturbances were noted. Appendix K documents the results of the surveys.

The only special-status species observed was a sharp-shinned hawk (*Accipiter striatus*) located in riparian habitat along the CCT Route. The results of the biological resources investigation are presented below.

Literature Search. The California Department of Fish and Game Natural Diversity Data Base (CNDDB, 2001) and the California Native Plant Society (CNPS) Inventory of Rare and Endangered Vascular Plants (CNPS, 2000) were searched for special-status species within a 15-mile radius of the project area. A review was conducted of the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP) (San Joaquin Council of Governments [SJCOG] 2000). The database and literature search results are listed in Table 4-2 and documented in Figure K-3, found in Appendix K.

Refer to Figure K-3 for a map of historic records of special-status species. A discussion of the potential for these species to occur within the project rights-of-way is provided in the Special-Status Species Occurrence below.

Habitat and Wildlife Description

Plant Site. The proposed plant site is located within the City of Lodi, in an industrial park area on the eastern side of the City. The site is located in a disturbed ruderal field that extends approximately 500 feet to the east beyond the project plant site footprint where it is bordered by Guild Avenue.

Adjacent habitat is limited to the ruderal field to the east. A fenced electrical substation and railroad yard delineates the northern border of the project site. A fenced water well facility borders the proposed plant site to the west.

The proposed plant site is dominated by invasive, ruderal vegetation (annual native and non-native grasses and herbs with a short and sparse ground cover) dominated by yellow starthistle (*Centaurea solstitialis*). Wildlife in and around the site is relatively limited, providing only foraging areas for birds, reptiles, and small mammals. A rabbit, *Sylvilagus* sp., was observed in the plant site area. Bird species observed during the biological resources survey on August 2, 2001 included European starlings, yellow-billed magpie, rockdove, scrub jay, and killdeer. Birds of prey with a high tolerance to development and ground disturbance, such as red-tailed hawks, could use the project site for foraging for small rodents. Note, however, that the project site survey did not reveal rodent sign or their burrows. Other potential wildlife using the site could include fence lizards, domestic cats, and other urban bird species. Refer to Tables K-1 and K-2 in Appendix K for a list of plant and wildlife species observed during field surveys.

Preferred Western Route. The Western gas pipeline route would be 3.07 miles in length. The route would extend northwest and then north from the plant site along paved or dirt roads which traverse residential, industrial, and agricultural land uses. Because of the absence of native habitats, wildlife usage of the route is low. Small isolated pockets of mostly non-native ruderal habitat occur within the route right-of-way and are mapped on Figure K-2 and described below.

The habitat found along the Western Route is primarily low quality due to high levels of disturbance. Consequently, excluding the riparian zone of the Mokelumne River, only isolated patches of ruderal vegetation appear to be supported. Some of the plant species observed are the following: prickly lettuce (*Latuca serriola*), littleseed canarygrass (*Phalaris minor*), mustard (*Brassica* sp.), yellow starthistle (*Centauraea solstitialis*), bermudagrass (*Cynodon dactylon*), dallisgrass (*Paspalum dilatatum*), ripgut brome (*Bromus madritensis*), chicory (*Cichorium intybus*), turkey mullein (*Eremocarpus setigerus*), common sunflower (*Helianthus annus*), curly dock (*Rumex crispus*), johnsongrass (*Sorghum halepense*), field bindweed (*Convolvulus arvensis*), oat (*Avena* spp.), prostrate pigweed (*Amaranthus blitoides*), redroot pigweed (*Amaranthus retroflexus*), annual sowthistle (*Sonchus oleraceus*), russian thistle (*Salsola iberica*), and yellow toadflax (*Linaria vulgaris*). These resources have limited botanical and wildlife value due to disturbance and lack of native plant species, and are not mapped on Figure K-2.

The habitat of the Mokelumne River is composed of interior live oaks (*Quercus wislizeni*), valley oaks (*Quercus lobata*), fremont cottonwoods (*Populus fremontii*), sandbar willows (*Salix exigua*), and black willows (*Salix nigra*). The riparian corridor of the Mokelumne River will not be impacted due to the utilization of directional drilling techniques. The drill entry and exit will be placed no closer than 250 feet from the top of the bank, with staging areas sited in existing paved, dirt, or ruderal areas.

Other biological resources present on this route within the right-of-way include an interior live oak located at milepost (MP) 1.35, the bore entry area, and three black oaks (*Quercus kelloggii*), two at approximately MP 3.0 and one located at MP 3.04.

Any impact to the native trees and shrubs located within the right-of-way of the linear routes will be avoided by using horizontal boring techniques at a sufficient depth so as to avoid damaging root systems.

Consistent with the Migratory Bird Act, as implemented by the USFWS, any active or potential raptor nests will be monitored by biological monitors with no construction activities occurring within one-quarter mile (1,320 feet) of the nests until any young have fledged.

Alternative CCT Route. The CCT gas pipeline route will be approximately three miles in length. The route will extend east and then north from the plant site through paved or dirt roads within the CCT Railroad right-of-way.

The entire CCT Route occurs within active agriculture, residential, commercial, or industrial land uses. Because of the absence of native habitats, wildlife usage of the route is low. Small isolated pockets of mostly non-native ruderal habitat occur within the route right-of-way and are mapped on Figure K-2 and described below.

The CCT Route right-of-way parallels an existing railroad. This corridor is disturbed and has either paved or dirt surfaces with small, isolated patches of ruderal vegetation. The ruderal vegetation is limited to mostly Russian thistle (*Salsola iberica*), prickly lettuce (*Lactuca serriola*), mustard (*Brassica* sp.), dallisgrass (*Paspalum dilatum*), ripgut brome (*Bromus madritensis*), chicory (*Cichorium intybus*), turkey mullein (*Eremocarpus setigerus*), and annual sowthistle (*Sonchus oleraceus*). These resources have limited botanical and wildlife value due to disturbance and lack of native plant species, and are not mapped on Figure K-2.

The only notable native habitat or wildlife resources within the CCT Route right-of-way include (1) the riparian zone along the banks of the Mokelumne River; (2) several isolated native trees or shrubs adjacent to the right-of-way; and (3) several isolated native trees and shrubs potentially within the right-of-way.

The canopy on the banks of the Mokelumne River is dominated by interior live oaks (*Quercus wislizeni),* valley oaks (*Quercus lobata*), fremont cottonwoods (*Populus fremontii*), sandbar willows (*Salix exigua*), and black willows (*Salix nigra*). A sharp-shinned hawk (*Accipiter striatus*) was observed by surveyors in this riparian zone, which provides potential foraging habitat for birds of prey. The riparian corridor of the

Mokelumne River will not be impacted due to the utilization of horizontal directional drilling technique. The drill entry and exit will be placed no closer than 250 feet from the top of the bank with staging areas sited in existing paved, dirt, or ruderal areas.

Several native trees and shrubs were located within the potential right-of-way area; these are as follows:

- An elderberry shrub (*Sambucus mexicanus*) at MP 0.9, approximately 15 feet west of the railroad track
- Two elderberry shrubs (*Sambucus mexicanus*) at MP 1.2, approximately 10 feet west of the railroad track
- Several interior live oaks (*Quercus wislizenii*) from MP 1.25 to 1.52, all located along a windbreak paralleling the railroad tracks 10 feet to the east
- A blue oak (*Quercus douglasii*) at MP 2.8, approximately 20 feet west of the railroad track
- One interior live oak (*Quercus wislizenii*), at MP 2.9, approximately 30 feet west of the railroad track

Metering and Pig Launching Facilities. A metering station and pig launching facility will be located at one of two proposed locations.. Both proposed sites are located on the east side of the Highway 99 frontage road between Acampo and Woodbridge Road. The first site is located on the Thomas property (APN 017-080-54) approximately three-eights mile north of Woodbridge, and the second site is located on the Corda property (APN 017-080-64) one-half mile north of Woodbridge. The Thomas property site (0.08 acres) is currently in grape production. The Corda property site (0.12 acres) is a portion of residential property that is disked annually. The Corda property site is dominate by ruderal species. No native habitat is present in either one of the locations. Because of the absence of native habitats, wildlife usage of these areas is low. The occurrence of Special Status Species at either location is highly unlikely due to the lack of native habitat.

Construction and operation of the facilities will not require water, sewer, or storm water connections. No wetlands or "waters" exist at either location nor will construction of the facilities impact wetland or "waters." Neither site is within a 100-year floodplain.

Special-Status Species Occurrence

The species identified as candidate, sensitive, or special-status species that may occur in or near the project area are discussed below and summarized in Table 4-2, including special-status plants, wildlife, and fish species. The only species identified was a sharp-shinned hawk (*Accipiter striatus*).

Steelhead Trout. The steelhead trout (*Oncorhynchus mykiss*) Central California Valley population is listed as a federally threatened species. The steelhead species was found originally from northwestern Mexico to Kuskokwim River, Alaska, and now is rarely found south of the Ventura River, California. This fish is an anadromous form of the rainbow trout, living as adults and maturing juveniles in the ocean and spawning in freshwater streams. Wild fish usually spend two to four years in fresh water and one to five years at sea. Some spent adults may not die after spawning, but instead move back to the ocean and return a year or more later to their natal stream as "repeat spawners." Population numbers have declined due to many factors, including habitat loss and degradation, poor water quality, over fishing, and increased competition with non-native fish species.

The steelhead trout is potentially present in the Mokelumne River aquatic habitat. Gas pipeline design and construction methods have been selected to avoid impacts to this sensitive resource.

Chinook Salmon. The chinook salmon (*Oncorhynchus tshawytscha*) is the least abundant and largest in size of the Pacific salmon. This fish is an anadromous species, living as adults and maturing juveniles in the ocean and spawning in freshwater streams. Generally, chinook salmon spend from one to eight years (usually three to four) in the ocean before they return to their natal stream to spawn. In California there are spring, fall, and winter spawning runs, while the summer run is now extinct. Population numbers have declined due to many factors including habitat loss and degradation, poor water quality, over fishing, and increased competition with non-native fish species.

The chinook salmon is potentially present in the Mokelumne River aquatic habitat. Gas pipeline design and construction methods have been selected to avoid impacts to this sensitive resource.

TABLE 4-2
SPECIAL-STATUS SPECIES POTENTIALLY OCCURRING AT THE LODI PROJECT SITE

Common Name	Scientific Name	Status[1]
Wildlife		
Steelhead Trout – Central Valley	*Oncorhynchus mykiss*	FT
Chinook Salmon – winter run	*Oncorhynchus tshawytscha*	SE/FE
Chinook Salmon – late fall run	*Oncorhynchus tshawytscha*	FC
Chinook Salmon – spring run	*Oncorhynchus tshawytscha*	FT/ST
Sacramento Splittail	*Pogonichthys macrolepidotus*	FT
Longfin Smelt	*Spirinchus thaleichtys*	FSC/CSC
Delta Smelt	*Hypomesus transpacificus*	FT/ST
California Tiger Salamander	*Ambystoma californiense*	FE/SC
Foothill Yellow-legged Frog	*Rana boylii*	SC
Sharp-Shinned Hawk	*Accipiter striatus*	CSC
Swainson's Hawk	*Buteo swainsoni*	ST
Burrowing Owl	*Athene cunicularia*	SC
Tricolored Blackbird (Nesting Colony)	*Agelaius tricolor*	SC
California Black Rail	*Laterallus jamaicensis coturniculus*	FSC/ST
Western Pond Turtle	*Clemmys marmorata*	SC
Giant Garter Snake	*Thamnophis gigas*	FT/ST
Valley Elderberry Longhorn Beetle	*Desmocerus californicus dimorphus*	FT
Plants		
Legenere	*Legenere limosa*	1B
Succulent Owl's-clover	*Castilleja campestris* ssp. *succulenta*	FT/SE
Sanford's Arrowhead	*Sagittaria sanfordii*	1B
Rose Mallow	*Hibiscus lasiocarpus*	2
Mason's Lilaeopsis	*Lilaeopsis masonii*	1B
Suisan Marsh Aster	*Aster lentus*	1B
Delta Tule Pea	*Lathyrus jepsonii* var. *jepsonii*	1B

[1] **U.S. Fish and Wildlife Service (Federal)**

FE = Endangered (In danger of becoming extinct throughout all or a significant portion of its range)
FT = Threatened (Likely to become endangered in the foreseeable future in the absence of special protection)
FC = Federal Candidate (Candidate for FT or FE listing)
FSC = Species of Concern (Sufficient information exists which warrants concern over that species status and warrants study)

California Department of Fish and Game (State)

SE = Endangered (In danger of becoming extinct throughout all or a significant portion of its range)
ST = Threatened (Likely to become endangered in the foreseeable future in the absence of special protection)
SC = State Candidate [Candidate for SE or State Threatened (Likely to become endangered in the foreseeable future in the absence of special protection)].
CSC = Species of Concern (Information exists which warrants concern over that species' status and may warrant future listing).
1B = California Native Plant Society (CNPS) listed plants rare, threatened, or endangered
2 = California Native Plant Society (CNPS) listed plants rare, threatened, or endangered in California, but more common elsewhere.

Sacramento Splittail. The Sacramento splittail (*Pogonichthys macrolepidotus*) is endemic to California and was once widely distributed in lakes and rivers throughout the Central Valley. Historically, this species was found as far south as the present-day Friant Dam on the San Joaquin River, as far north as Redding on the Sacramento River, and as far upstream as the current Oroville Dam site on the Feather River and Folsom Dam site on the American River.

Although primarily a freshwater species, the splittail can tolerate salinities as high as 10 to 18 parts per thousand. In recent years, this fish has been collected most often in slow-moving reaches of rivers and sloughs and dead-end sloughs. Because they require flooded vegetation for spawning and rearing, splittail are frequently found in areas subject to flooding, such as the major flood basins distributed through the San Joaquin and Sacramento valleys (SJCOG, 2000).

In summary, the Sacramento splittail is potentially present in the Mokelumne River aquatic habitat. Gas pipeline design and construction methods have been selected to avoid impacts to this sensitive resource.

Longfin Smelt. The longfin smelt (*Spirinchus thaleichtys*) is a small fish found in several Pacific coast estuaries from Prince William Sound, Alaska, to San Francisco Bay, California. Historically, it seems likely that their range extended as far up into the Delta as the salt water intruded because longfin smelt seldom occur in fresh water except to spawn. Prior to construction of Shasta Dam, salt water would invade the Delta as far upstream as Sacramento during the dry months. The development of agriculture and water projects is believed to have restricted the range of the longfin smelt before any studies of their biology were begun. Longfin smelt numbers have declined by 90% since 1984 and by 50% annually since 1987. The decline in longfin smelt abundance is associated with fresh water diversions from the Delta, as well as drought conditions (SJCOG, 2000).

In summary, the longfin smelt is potentially present in the Mokelumne River aquatic habitat. Gas pipeline design and construction methods have been selected to avoid impacts to this sensitive resource.

Delta Smelt. The Delta smelt (*Hypomesus transpacificus*) is endemic to the upper Sacramento-San Joaquin estuary and inhabits open surface waters of the Delta and Suisun Bay. This species has been found as far upstream as the Sacramento River, the mouth of the Feather River, and as far as Mossdale on the San Joaquin River. Their normal downstream limit appears to be western Suisun Bay, although during high outflows they can be washed into San Pablo and San Francisco Bays.

Although historically, the delta smelt was widespread, the population has declined precipitously, beginning somewhere between 1982 and 1985. The causes of the decline in delta smelt are believed to be multiple and synergistic, and include: (1) reduction in outflows; (2) high outflows; (3) entrainment losses, due to water diversions; (4) changes in food organisms; (5) toxic substances (e.g., agricultural pesticides); and (6) loss of genetic integrity. Within San Joaquin County Delta, smelt have been collected in the Mokelumne River (SJCOG, 2000).

The Delta smelt is potentially present in the Mokelumne River aquatic habitat. Gas pipeline design and construction methods have been selected to avoid impacts to this sensitive resource.

California Tiger Salamander. The California tiger salamander (*Ambystoma californiense*) is known from the Central Valley and Coast Ranges of California. This species inhabits grasslands, and requires temporary pools (such as vernal pools or stock ponds) for successful reproduction. Pools holding water for several months are adequate for larval transformation; permanent pools generally contain important predators of larval salamanders (such as introduced fish and bullfrogs), and are therefore unsuitable for breeding purposes.

California tiger salamanders occur in low elevation grasslands and oak woodlands in the Southwest Zone, and alongside the eastern edge of San Joaquin County in the Vernal Pool Zone and inter-fingered natural habitats of the Central Zone (SJMSCP, 2000). Eastern San Joaquin County is part of the Sacramento Valley population of California tiger salamanders.

The California tiger salamander is potentially present in the Mokelumne River aquatic habitat. Gas pipeline design and construction methods have been selected to avoid impacts to this sensitive resource.

Foothill Yellow-legged Frog. The foothill yellow-legged frog (*Rana boylei*) is a species of streams and rivers. It is known from the Coast Ranges and west side of the Sierra Nevada northward through the central Cascades. There are four records for this species from San Joaquin County, three of which define occupied habitat. The present status of this species in western San Joaquin County is unknown. Likewise, its presence in eastern San Joaquin County, where suitable habitat does exist, is also unknown.

The foothill yellow-legged frog is potentially present in the Mokelumne River aquatic habitat. Gas pipeline design and construction methods have been selected to avoid impacts to this sensitive resource.

Sharp-shinned Hawk. The sharp-shinned hawk (*Accipiter striatus*) occurs in most of North America and is a resident species throughout California. This species is a rare but documented breeder in San Joaquin County, and can be found in most habitat types but prefers woodland areas near water for nesting.

One sharp-shinned hawk was observed within the riparian area of the Mokelumne River on the CCT Route. This riparian habitat area on the Mokelumne River will be avoided through the use of directional boring techniques.

Swainson's Hawk. The Swainson's hawk (*Buteo swainsoni*) may occur near the site. Swainson's hawks were once found throughout California except in the mountainous regions of the state, including the Central Valley, all of the Coast Ranges south of Marin County, the Tehachapi Range, the Colorado River area, the Mojave Desert, the Great Basin, and the Modoc Plateau. Today Swainson's hawks are mainly limited to a few areas of the Central Valley and the Great Basin. In historic times (ca. 1900), Swainson's hawks may have maintained a population in excess of 17,000 pairs. Today the statewide population is estimated to be only about 550 pairs. There are hundreds of records of Swainson's hawks for San Joaquin County, including many nests in isolated trees (SJCOG, 2000).

This bird prefers open habitat such as mixed short grass grasslands with scattered trees and shrubs for perching, dry grasslands, irrigated meadows, and edges between the two habitat types. The best habitat is concentrated along permanent waterways with a more or less continuous canopy of trees with grassland, irrigated pasture, alfalfa or grain fields nearby. Swainson's hawks require large trees in which to nest, and nearby open grasslands, pastures, grain or alfalfa fields in which to forage (SJCOG, 2000). The hawk, if present, would likely use the large eucalyptus and cottonwood trees present in adjacent habitat for perching. The hawk could exploit the abundance of prey made available due to the effects of certain nearby farming practices.

No Swainson's hawks or nests were identified during biological resources surveys conducted for the LEEF project. Furthermore, the proposed project will not disrupt the existing eucalyptus or cottonwood trees found adjacent to project components.

In summary, the Swainson's hawk potentially could occur flying or foraging within range of the gas pipeline routes. The hawk, if present, would likely use the large eucalyptus and cottonwood trees present in adjacent habitat for perching. However, the proposed project will not disrupt these trees.

Burrowing Owl. The burrowing owl (*Athene cunicularia*) inhabits open grasslands and shrublands in the Central Valley, coastal regions, and deserts of California. They live and

breed in burrows created by badgers and ground squirrels and in man-made features such as drainpipes. They occur in a patchy distribution throughout San Joaquin County, but recently have shown a decline of over 50% in the number of breeding pairs in the Central Valley. There are 88 records in San Joaquin County, of which 46 define occupied habitat. Burrowing owls occur in open ground and forage on small rodents and larger insects. They typically require burrows dug by fossorial mammals; burrowing owls take over when the burrows are abandoned by the original resident.

There are only a few areas of very low habitat value with little or no evidence of fossorial mammals; it is unlikely that burrowing owls will occur in the project area.

Tricolored Blackbird. Tricolored blackbirds (*Agelaius tricolor*) occur chiefly (99%) in California in the Central Valley, surrounding foothills, coastal areas, and scattered inland areas of northern and southern California. For breeding, tricolored blackbirds historically have been reported from dense tule marshes or patches of tules, cattails, or other emergent vegetation; more recently, the trend has been for more colonies to occur in blackberry thickets, and certain spiny grain crops such as wheat and barley. Breeding marshes may be wet or dry. High-value foraging habitats for breeding tricolors include irrigated and unirrigated grasslands and pastures, vernal pool grassland complexes, and hay fields of alfalfa or other species, especially if recently cut and flood-irrigated. Foraging sites must be within a few miles of the nesting site.

There is no occurrence of potential tricolor breeding habitat, with the exception of the Moklumne River area and little or no occurrence of foraging areas within the project area. It is unlikely that tricolored blackbirds will occur in the project area. Impacts to the riparian habitats associated with the Moklumne River area will be avoided by use of horizontal directional drilling techniques.

California Black Rail. The California black rail (*Laterallus jamaicensis coturniculus*) is a secretive bird restricted to large salt and freshwater marshes of coastal California. It ranges from Tomales Bay southward along the coast to northern Baja California, and in fresh water in the Delta region and along the Colorado River. The SJCOG project database includes 55 records for this species. Twenty-seven records, all in densely vegetated waterways in the Delta, define occupied habitat. Nesting habitat for the California black rail is at the water's edge, under dense herbaceous canopy (SJCOG, 2000). This bird is highly unlikely to occur at the site because of lack of suitable habitat.

Western Pond Turtle. The western pond turtle (*Clemmys marmorata*) occurs from the Pacific Northwest through the Central Valley, southern Coast Ranges, and northern Baja California. The Central Valley is an area of intergradation of two subspecies, the northwestern (*C. m. marmorata*) and southwestern pond turtle (*C. m. pallida*), that are

recognized by some workers. Pond turtles inhabit ponds, marshes, streams, and ditches that typically have a rocky or muddy substrate and support emergent vegetation. The lack of natural, permanent water in the San Joaquin Valley has nearly eliminated this species from the valley floor.

The western pond turtle is potentially present in the Mokelumne River aquatic habitat. Gas pipeline design and construction methods have been selected to avoid impacts to this sensitive resource.

Giant Garter Snake. The giant garter snake (*Thamnophis gigas)* is potentially present in habitat adjacent to the Mokelumne River. This snake, one of the most aquatic of garter snakes, is usually found in streams, marshes, and sloughs with mud bottoms, but also occurs in drainage canals and irrigation ditches. The original reported range of the giant garter snake was the San Joaquin Valley from the vicinity of Sacramento and Antioch southward to Buena Vista Lake, Kern County. The present known distribution extends from the vicinity of Gridley, Butte County, to the vicinity of Burrel, Fresno County (SJCOG, 2000).

Giant garter snakes have fairly specific habitat requirements that are compatible with certain agricultural practices, such as rice farming, but are incompatible with a number of human uses, including recreation, flood control, and even duck management. Since they are aquatic hunters, they must have permanent, though not necessarily extensive, water. Flooding destroys winter hibernacula (chambers above the highest flood level used for hibernation); the giant garter snake must have a protected, non-flooding upland site in which to overwinter. Giant garter snakes do not greatly benefit from tree and shrub cover on banks; instead, they require open, steep banks on which to bask and from which to dive when alarmed (SJCOG, 2000).

In summary, the giant garter snake is potentially present in the Mokelumne River aquatic habitat. Gas pipeline design and construction methods have been selected to avoid impacts to this sensitive resource.

Valley Elderberry Longhorn Beetle. The valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) is dependent on its host plant, elderberry (*Sambucus* species), which is a common component of the remaining riparian forests of the Central Valley. Use of the plants by the animal, a wood borer, is rarely apparent. Frequently, the only exterior evidence of a shrub's use by the beetle is an exit hole created by the larva just prior to the pupal stage. The extensive loss of riparian habitat in the California Central Valley area strongly suggests that the range of the beetle has been reduced and its distribution fragmented. Within San Joaquin County, distribution of the

valley elderberry longhorn beetle includes elderberry savanna and all valley floor riparian and foothill habitats that support elderberry.

There are no elderberry species within the proposed plant site. Three elderberry shrubs are located within the potential right-of-way on the CCT Route. Several other elderberry shrubs occur in adjacent habitat that will not be impacted. If elderberry plants are removed, the area of disturbance will be restored, as appropriate, in consultation with appropriate agencies. In addition to onsite restoration, the applicant shall acquire mitigation credits from the USFWS-approved mitigation bank, using a ratio of 3:1 based on the number of stems removed.

Legenere. Legenere (*Legenere limosa)* is an inconspicuous annual herb in the bellflower family. It is known from the southern North Coast Ranges, and the Central Valley from San Joaquin and Solano counties to Tehama County. Within San Joaquin County, there are four recent records defining occupied habitat in the Goose Creek area. The habitat for *Legenere limosa* is vernal pools, usually relatively deep, well-defined ones. The project site and pipeline routes do not provide suitable habitat for this plant.

Succulent Owl's-clover. Succulent Owl's-clover (*Castilleja campestris* ssp. *succulenta*) is a glabrous, hemiparasitic (partly parasitic) annual herb belonging to the snapdragon family (*Scrophulariaceae*). It occurs in vernal pools in the Central Valley of California. This small annual plant was formerly more widespread in the Central Valley and is now extirpated from its type locality near Ryer in Merced County. The plant discontinuously occurs in the San Joaquin Valley over a range of 145 kilometers (km) (66 miles) extending through northern Fresno, western Madera, eastern Merced, southeastern San Joaquin, and Stanislaus counties. The project site and pipeline routes do not provide suitable habitat for this plant.

Sanford's Arrowhead. Sanford's arrowhead (*Sagittaria sanfordii*) is a perennial herb belonging to the arrowweed family. Its historic range in California is the Central Valley from Butte County to Fresno County and along the coast from Del Norte County to Ventura County. It is mostly extirpated from the Central Valley due to channel and flow alteration of the major waterways. There are three records for this species from San Joaquin County, two from the Isleton quad and one from the Waterloo quad. Sanford's arrowhead is an emergent plant, growing in shallow, slow moving waters. Although its natural habitat is along streams and rivers, it also is sometimes found along man-made channels. The project site and pipeline routes do not provide suitable habitat for this plant.

Rose Mallow. Rose Mallow (*Hibiscus lasiocarpus*) is a perennial herb in the mallow family. This species is very tall, but is sometimes found spreading along the ground,

which allows for colonization from rhizomes at the stem nodes. The large leaves are heart shaped and the bell-shaped flowers are white to rose, turning red at the base. Rose mallow occurs in fresh water in marshes and swamps in approximately 28 locations in nine counties in Central California. The project site and pipeline routes do not provide suitable habitat for this plant.

Mason's Lilaeopsis. Mason's lilaeopsis (*Lilaeopsis masonii*), a small perennial herb in the carrot family, is a rare plant endemic to Alameda, Contra Costa, Marin, Napa, Sacramento, San Joaquin, and Solano counties of California. It occurs in riparian, and freshwater and brackish marshes from sea level to 25 feet in elevation. Known populations occur in water salinities from 0 ppt to 8.5 ppt. Peaty soils or clay soils are preferred. In San Joaquin County, there are 230 records of this species, of which 154 define occupied habitat. This large number is the result of thorough resource surveys conducted in the Delta region (SJCOG, 2000). The project site and pipeline routes do not provide suitable habitat for this plant.

Suisun Marsh Aster. Suisun marsh aster *(Aster lentus)* is a perennial herb in the aster family known strictly from five counties in the Delta region. There are 95 records for this species in the project database in San Joaquin County, primarily the Bouldin Island, Isleton, Holt, Terminous, and Woodward Island quads. Forty-seven of those records are considered robust enough to define occupied habitat. The habitat for the species is at the water's edge, in places where water is brackish and there is some tidal influence (SJCOG, 2000). The project site and pipeline routes do not provide suitable habitat for this plant.

Delta Tule Pea. Delta tule pea *(Lathyrus jepsonii* var. *jepsonii)* is a perennial herb in the pea family. Although known primarily from the water's edge in the brackish and fresh-water portions of the Delta region, there are also records of this species from Fresno, Marin, San Benito, and Santa Clara counties. Within San Joaquin County, there are 42 records for this species in the SJCOG's project database. Sixteen of these records define occupied habitat, all closely associated with the waterways of the Delta (SJCOG, 2000). The project site and pipeline routes do not provide suitable habitat for this plant.

Riparian Habitat and Sensitive Natural Communities

Riparian habitat exists in the Mokelumne River area. This area will be avoided with the use of horizontal directional drilling. The boring entry and exit will be placed no closer than 250 feet from the Mokelumne River. Drilling staging areas will be sited in existing paved, dirt, or ruderal areas, and will not impact biological resources. A site-specific draft frac-out plan is provided in Appendix H, and will be implemented during project construction at the Mokelumne River crossing.

Sensitive natural habitat components have been identified within the project area. On the Western gas pipeline route, this includes one valley oak (*Quercus lobata*) within the right-of-way at MP 1.35; 2 black oaks (*Quercus kelloggi*) within the right-of-way at MP 3.0; and one black oak (*Quercus kelloggi*) within the right-of-way at MP 3.15.

On the CCT Route, sensitive habitat components include an elderberry (*Sambucus mexicanus*) within the right-of-way at MP 0.9, 2 elderberry shrubs (*Sambucus* sp.) within the right-of-way at MP 1.2, several interior live oaks (*Quercus wislizenii*) located within the right-of-way from MP 1.25 to 1.52, a blue oak (*Quercus douglasii*) within the right-of-way at MP 2.8 and one interior live oak (*Quercus wislizenii*) located within the right-of-way at MP 2.9.

These locations are shown in Figure K-2. Several other valley oaks (*Quercus lobata*) and elderberry (*Sambucus mexicanus*) were identified adjacent to the right-of-way along the linear routes, and are also shown in Figure K-2. These will be avoided by placement of the right-of-way away from these areas, or with the use of horizontal boring techniques, if necessary.

Wildlife Movement

Wildlife movement is a commonly used term to describe linkages between discrete areas of natural habitat that allow movement of wildlife for foraging, dispersal, and seasonal migration. Such linkages are important in maintaining genetic diversity and critical population numbers of vertebrate species. A wildlife corridor is defined as a strip of land that connects two otherwise separate habitat areas. It generally contains grazed, non-native grassland habitat, but it may contain human-made elements (such as a freeway underpass) that facilitate movement across an otherwise restrictive barrier. This also would include the movement and potential migration of fish species within the river corridor.

Because there are no contiguous native habitats within the project area, with the exception of the Mokelumne River, wildlife corridors will not be disrupted during or after the LEEF project, nor will any native wildlife nursery sites be impeded. The Mokelumne River is a major waterway and hosts numerous fish and waterfowl species, but will not be impeded because the linear components will cross underneath this area using horizontal drilling techniques.

Wetlands or "Waters of the U.S."

No wetlands or "waters of the U.S." occur within the proposed plant site area. Wastewater from the plant site will be disposed as follows. All plant-related

contaminated waste drains will be removed via a wastewater truck and sent to the appropriate facility, as needed. Storm drains from the operational areas will be directed to an oil/water separator. The treated storm water from the oil/water separator will then be piped into the City sanitary sewer system in accordance with an Industrial Wastewater Permit. Any oil that does collect in the oil/water separator will be removed by a vacuum truck and taken to the appropriate facility.

Runoff water at the proposed plant site drains toward Thurman Street and discharges into the existing storm drain system operated by the City of Lodi. Storm water in the non-operational areas (e.g., access roads, landscaped areas, and other open areas outside the equipment areas) will drain to the City storm sewer system drain inlets located on Thurman Street.

Water discharges associated with plant construction will be treated onsite in accordance with a Storm Water Pollution Prevention Plan.

The linear components will potentially cross "waters of the U.S." Both the CCT and Western pipeline routes will cross the Mokelumne River, a major waterway. There are no other wetland areas or streambeds located along the pipeline routes that could potentially be impacted by pipeline construction or operations. All potential impacts to the river and riparian zone will be avoided, using horizontal drilling techniques with drilling staging areas set back a minimum of 250 feet from the top of the riverbank. A U.S. Army Corps of Engineers Nationwide Permit 12 will be obtained. This permit will include specific provisions for avoidance of impacts to wetland resources. Although the pipeline routes will not cross open streambeds, it is anticipated that a streambed alteration permit will be needed in the unlikely event that a frac out occurs during the pipeline construction at the Mokelumne River. Hydrostatic test water associated with pipeline construction will be drained out of the system and tested for compliance with the NPDES and California RWQCB requirements. If necessary, the water will be treated before being discharged back into either an agricultural field, an agricultural well, or the City's municipal waste water system.

e) **Local Policy/Ordinance Biological Resource Protection**

The City of Lodi General Plan includes goals to protect sensitive native vegetation and wildlife habitats and fisheries resources. These include:

- Protecting the river channel, pond, and marsh, and riparian vegetation and wildlife communities and habitats in the Mokelumne River and floodplain areas

- Siting development to maximize the protection of native tree species and sensitive plants and wildlife habitat

- Encouraging the use of native plant species for landscaping roadsides, parks, and urban developments

- Requiring site-specific surveys to identify significant vegetation and wildlife habitat

Through the use of project design, construction techniques, and revegetation procedures, the biological resources including the Mokelumne River and floodplain areas, native tree species, sensitive plants, and wildlife habitat will not be significantly impacted.

The SJMSCP also contains ordinances concerning biological resources, which are discussed below.

f) **San Joaquin County Multi-Species Habitat Conservation and Open Space Plan**

The San Joaquin Council of Governments (SJCOG) created a voluntary Multi-Species Habitat Conservation and Open Space Plan (MSCP) to address management of critical species habitat and open space. Open space consists of (1) agricultural lands, (2) natural lands other than wetlands such as oak woodlands, grassland, and scrub, (3) vernal pool natural lands, and (4) wetlands other than vernal pools. Mitigation fees for the conversion of these spaces to non-open space will contribute to the creation of preserve areas.

One hundred critical species are covered by the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP) including: species listed under the California and Federal Endangered Species Acts as threatened or endangered (or rare, in accordance with the California Endangered Species Act (CESA); federal candidate species; species proposed for listing as threatened or endangered; birds covered by the Migratory Bird Treaty Act; species protected by the Bald and Golden Eagle Protection Act (the golden eagle, but not the bald eagle, is a SJMSCP Covered Species), and species which may be of concern pursuant to CEQA and National Environmental Policy Act (NEPA) including CNPS 1A, CNPS 1B, and CNPS 2 plants; state-listed species of special concern; state-listed special animals and special plants; state-designated fully protected species; and federal species of concern.

Summary of Biological Resource Mitigation

The following mitigation will be implemented for the protection of biological resources:

- The Mokelumne River crossing will be designed and implemented in such a way as to avoid impacts to the waterway and adjacent riparian areas, with the use of directional drilling techniques. The boring entry and exit areas will be placed no closer than 250 feet from the top of the bank with all staging and construction areas located in disturbed, paved, or ruderal areas. A frac-out contingency plan will be implemented to minimize potential impacts from the release of drilling muds into the water column (refer to Appendix H for the Preliminary Frac-out Contingency Plan).

- All impacts to native trees, shrubs, and habitats will be avoided by design. The project-specific mitigation monitoring plan will require a biological monitor to ensure that native trees, shrubs, or habitats are not impacted.

- Any impact to the native trees and shrubs located within the right-of-way of the linear routes will be avoided using horizontal boring techniques at a sufficient depth so as to avoid damaging root systems.

- Any active or potential raptor nests will be monitored by biological monitors with no construction activities occurring within one-quarter mile (1,320 feet) of the nests until any young have fledged.

4.6 CULTURAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	☐	☒	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☒	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☒

a–d) **Background**

Prehistoric resources are those sites and artifacts associated with the indigenous, non-Euroamerican population, generally prior to contact with people of European descent. Historical resources include structures, features, artifacts, and sites that date from Euroamerican settlement of the region. At the time of first European contact, the City of Lodi was within the ethnographic territory of the Plains Miwok. As early as 5,000 years ago, the Plains Miwok inhabited the area along the lower courses of the Sacramento, Cosumnes, Mokelumne, and San Joaquin Rivers and the adjoining Delta. In the early 19th century, they lost much of their cultural cohesiveness to missionization and disease. In the late-19th century, the City of Lodi began to develop in response to the growth of agriculture and the Western Pacific Railroad, which traveled through the city.

Documentary Research

The Central California Information Center (CCIC) of the California Historic Resources Information System (CHRIS) conducted a records search on July 30, 2002 (RS #4664L) to address areas of the LEEF that had not been previously surveyed. Information was requested for both archaeological sites and historic built environment resources. Information sources included the National Register of Historic Places (NRHP), California Historic Landmarks, California Register of Historic Resources (CRHR), and California Points of Historical Interest. This records search specifically

covered the portion of the Western pipeline route that parallels Highway 99 for approximately one mile between Clarksdale Road and the PG&E Line 197 tie-in point. This search of the project area and the area one-half mile around it showed that no previous historic or prehistoric resources have been reported.

The records search indicated that previous cultural resources investigations that have been conducted in the project area include two record searches that were performed in 2001 at the CCIC for another project on the same site as that currently proposed. The primary differences in the project descriptions were with regard to linear facilities, as described above. These record searches encompassed a one-quarter mile area around the plant site, laydown area, the currently proposed CCT Route, and most of the currently proposed Western Route. These previous records searches requested information on both archaeological sites and historic built environment resources.

These record searches, conducted on July 31, 2001 (RS #4311L) and August 22, 2001 (RS #4336L) indicated that two prior archaeological surveys have been conducted in the study area. Additionally, this search indicated one previously recorded prehistoric resource and two previously recorded historic resources located in the one-quarter-mile study area. The two historic resources are located within the project's Area of Potential Effect (APE), which is defined as an approximate four-acre parcel of land bounded by Thurman Street on the south, an existing substation on the west, and north and Guild Avenue on the east. These resources are railroads that have been previously evaluated by JRP Historical Consulting Services to be ineligible for listing in the NRHP due to lack of integrity (Hatoff et. al., 1995). The one previously recorded prehistoric resource is outside the APE of the LEEF project (inclusive of the pipeline routes) and will not be affected.

A record search of the sacred lands file at the California Native American was conducted on August 6, 2002 for the immediate project area. This search failed to indicate the presence of Native American cultural resources in or around the project area.

Field Survey Methods and Results

A survey of the proposed Western Route, including both the metering and pig launching facility locations, was conducted on August 15 and 16, 2002 by Reid Farmer, RPA, of URS Corporation. See Appendix A Project Location Map for project location and components. Previous to this proposed project, a cultural resources survey of the plant site and laydown area was conducted on August 1, 2001 by Brian Hatoff, RPA, and Rachael Egherman, of URS Corporation for another project that had proposed a similar project configuration. An additional previous survey was conducted on

September 6, 2001 to inspect gas pipeline routes that followed similar routes as those currently proposed.

Plant Site and Laydown Area – Because the records search indicated that the plant site and laydown area had been subject to prior archaeological survey, no field survey was conducted in August 2002 for the current proposed project.

Preferred Western Route – The August 15 and 16, 2002 field survey was carried out in areas not covered in the previous 2001 surveys. Between the current survey and the previous surveys, URS Corporation has conducted an intensive pedestrian survey utilizing 10-meter-wide transects along the entire proposed Western Route. The combined surveys covered the pipeline APE, which will be no more than 75-feet wide located within paved city streets, paved rural roads and their unpaved shoulders, and dirt farm roads. Where the pipeline will bore under the Mokelumne River, the ingress and egress points were extensively surveyed including the areas where laydown and staging will be located. No historic or prehistoric archaeological material or evidence of archaeological deposits or debris was found on the ground surface within the APE. However, the Western Route could potentially contain buried archaeological remains.

Alternative CCT Route – Because the records search indicated that the CCT Route had been subject to prior archaeological survey, no field survey was conducted in August 2002 for the current proposed project.

Previous Field Survey Results

Various components of the currently proposed project were surveyed in 2001, including the plant site, laydown area, the CCT Route, and most of the proposed Western Route.

Plant Site and Laydown Area – In August 2001, URS Corporation conducted an intensive pedestrian survey utilizing 10-meter-wide transects. The APE is located on undeveloped land surrounded by modern industrial facilities. No historic or prehistoric archaeological material or evidence of archaeological deposits or debris was found on the ground surface within the APE. However, the plant site and laydown area is on undeveloped lands, which could contain buried archaeological remains.

Preferred Western Route – The records search indicated that portions of the Western route had been subject to prior archaeological survey. An intensive pedestrian survey of the proposed Western Route was conducted utilizing 10-meter-wide transects. The APE, which consists of a right-of-way along the California 99 frontage road, consists of residence yards and recently tilled agricultural land. No historic or prehistoric archaeological material or evidence of archaeological deposits or debris was found on

the ground surface. However, as the APE is located within the river floodplain, there is the potential that the area could contain buried archaeological remains.

Alternative CCT Route – The previous archaeological surveys conducted by URS Corporation were comprised of an intensive pedestrian survey utilizing 10-meter-wide transects covering the entire CCT Route. The survey covered the APE, which will be no more than 75-feet wide located along the west side of the CCT Railroad tracks and within or adjacent to paved streets and dirt roads.

Assuming the pipeline will be bored under the Mokelumne River, the railroad bridge (a structure that has not been evaluated for significance criteria set forth for inclusion in the CRHR) will not be affected. The Southern Pacific railroad (which the pipeline crosses) and CCT Railroad have been formally recorded in locations outside this project's APE and evaluated as ineligible for listing in the NRHP due to lack of integrity. For the same reason, the property would not be eligible to the CRHR.

A Confidential Technical Report will be filed for the 2002 cultural resources investigation.

Two new historic resources were recorded during the archaeological reconnaissance along the CCT Route (URS, 2001). These resources consisted of a small building foundation and four telegraph poles that are no longer in use. The foundation, located adjacent to the CCT Railroad, is all that exists of the original building. This foundation is associated with the CCT Railroad, which was recommended by a qualified architectural historian to be ineligible for the NRHP. Due to this recommendation, the foundation, as a contributing element to the railroad, is likewise not eligible for listing in the NRHP or the CRHR. Additionally, as a stand-alone feature, this foundation does not meet eligibility criteria for the CRHR. It does not appear eligible under 1999 CEQA Guidelines section 15064.5(A) because it has not "made a significant contribution to the broad patterns of our history." Furthermore, it does not appear to qualify for listing under Section 15064.5(B) because it has no known associations with persons important to our history. Due to the destruction of the building, this foundation does not appear eligible under Section 15064.5(C) or (D) because it does not embody distinctive characteristics of a type, period, or method of construction and is not likely to yield information important in history.

Likewise, the four telegraph poles appear ineligible for listing in the CRHR due to insufficient integrity of setting, design, feeling, and association. These poles are in a derelict state with only four poles remaining, and are surrounded by new transmission lines and buildings, which have altered the original setting. These poles do not meet the

requirements under 1999 CEQA Guidelines section 15064.5(A)-(D) to be eligible for listing in the CRHR.

Both the foundation and telegraph poles lack integrity of original setting and design, and have been subject to damage caused by destruction and/or deterioration. Furthermore, they are non-unique resources and any data potential they posses have been preserved through mapping, recordation, and archival research. Therefore, the pipeline construction will not affect the historical significance of these two resources. Formal recordation forms are on file with the Central California Information Center to document these resources (URS, 2001).

No prehistoric archaeological material or evidence of archaeological deposits or debris was found on the ground surface within the APE of the CCT Route. However, the CCT Route could contain potentially buried archaeological remains.

Cultural Resource Mitigation

No significant impacts are anticipated on the plant site and laydown area or on the gas pipeline routes. Due to the possibility of buried archaeological remains in these areas, monitoring during construction activities is recommended. No mitigation measures are necessary in these areas unless previously undiscovered cultural resources are detected during construction. If buried cultural materials are encountered during construction, all work in that area must halt until a qualified archaeologist can evaluate the nature and significance of the finds and recommend further mitigation measures if needed. If human remains are encountered during construction, all work in that area must halt immediately and the San Joaquin County Coroner must be contacted, pursuant to California Public Resources Code sections 5097.94, 5097.98 and 5097.99. Once the County Coroner has made a determination as to the remains, the Applicant will coordinate with the State Historic Preservation Office (SHPO) and other parties, as appropriate, to develop a plan to evaluate the resource and make a determination regarding additional mitigation measures that may be required.

4.7 GEOLOGY AND SOILS

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☒	☐
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒

The geologic and soils setting of the project site is summarized below based on recent Environmental Site Assessments (ESAs) (URS, 2002, URS, 2001, and Advanced GeoEnvironmental, Inc., 1998) and Environmental Impact Reports (Jones & Stokes, 1999) for the site, surrounding properties, and general region.

a) The project site is situated within the Great Valley Geomorphic Province of California, a large, elongate, northwest trending, asymmetric structural trough. The Great Valley Province has been filled with thick sequences of sediment ranging in age from Jurassic to Recent, creating a nearly flat-lying alluvial plain extending from the Tehachapi Mountains in the south to the Klamath Mountains in the north. The western and eastern boundaries of this province are the California Coast Range and the Sierra Nevada Mountains, respectively. Rocks composing the basement complex of the province have not been completely defined, but are believed to be of metamorphic and igneous origins. The northern and southern portions of the Great Valley Province have been designated the Sacramento and San Joaquin Valleys, respectively.

   The Modesto, Riverbank, and Turlock Lake Formations and overlying recent alluvium are the principal source of domestic ground water in the 13,500 square-mile San Joaquin Valley Ground Water Basin (Basin 5-22). This basin is drained primarily by the San Joaquin River. The nearest surface water feature in the vicinity of the properties is the Mokelumne River, approximately 6,000 feet north of the plant site.

   The estimated depth to ground water at the site is approximately 60 feet below surface grade (bsg), based on the map titled *Lines of Equal Depth to Groundwater Spring 1996* published by the San Joaquin County Flood Control District (FCD) and Water Conservation District (WCD). The map titled *Lines of Equal Elevation of Groundwater Spring 1996*, also published by the FCD and WCD, shows the site to be in an area where groundwater flows toward the south and southwest, but this may be modified by changing recharge and discharge patterns. Groundwater is considered to be a beneficial use and is used for domestic, industrial, and commercial purposes.

   The land in the vicinity of the plant site gently slopes at a rate of approximately five feet per mile from the northeast to the southwest (Power Engineers Incorporated, 1989). Surficial soils at the plant site and along the pipeline routes consist primarily of well-drained fine sandy loams (Soil Conservation Service, 1992). Slope stability hazards are non-existent and present no risk in Lodi. Subsidence from natural gas or groundwater withdrawals in the Lodi area is not considered to be a significant hazard (City of Lodi General Plan, 1991).

   The greatest geologic hazard in Lodi is the structural danger posed by ground shaking from earthquakes originating outside of the area (City of Lodi General Plan, 1991). The

site is located in Seismic Zone 3, as determined by the 1997 Uniform Building Code (UBC). The nearest active fault is the Marsh-Creek fault, northern segment of the Greenville fault, located approximately 36 miles to the west. The State of California delineated zones around active faults under the Alquist-Priolo (AP) Earthquake Fault Zoning Act (Hart, 1994). The closest fault zone to the site zoned under the AP Earthquake Fault Zone Act is the Greenville Fault. The Stockton fault, which is considered inactive, is the closest mapped fault to the site, located approximately 14 miles to the south (Wagner et al, 1987).

The site lies within the 500-year flood zone (EDR, 2001); therefore, flooding is not considered an issue that requires special design consideration.

The plant and pipeline routes will be designed to meet or exceed applicable seismic safety standards, including but not limited to, standards specified in the UBC.

b) The plant site is flat and moderately vegetated with grasses and short brush. The soil is loose and exposed in many places and exhibits signs of having been tilled. Clearing and grading of the plant site for project construction will not result in any potential increase of erosion onsite. Cut and fill slopes, if required, will be landscaped, and Best Management Practices (BMPs) for control of erosion will be employed during the construction phase for the project site as well as the pipeline route, including the short-term use of sandbags, matting, mulch, berms, hay bales, or similar devices along all graded areas to minimize sediment transport. The exact design, location, and schedule of use for such devices will be determined based on final design details, and will be in conformance with requirements of the State General Construction Storm Water Permit for linear construction activities. A Construction SWPPP will be prepared, and a Notice of Intent (NOI) for this General Permit will be filed with the San Joaquin Valley RWQCB prior to start of pipeline construction.

c) No landslides are present on the site or in the vicinity of the gas pipeline routes. The potential for liquefaction is very low, and no significant geologic hazards that would adversely affect the proposed project were observed or are known to exist on the site or along the pipeline routes. All grading will be performed in accordance with the recommended grading specifications contained in the Grading Ordinance for the County of San Joaquin and the City of Lodi. Adherence to the grading specifications and the City and County ordinances will reduce any potential geologic impacts to below a level of significance.

d) A detailed geotechnical survey will be completed during the detailed design phase prior to construction. This survey will document soil conditions at the plant site and along the pipeline route including identification of soils susceptible to subsidence, collapse,

liquefaction, landslide, expansion, or other potential adverse conditions. Grading, soil compaction, and structural design will be implemented in accordance with the recommendations of the geotechnical survey report.

At a minimum, the project will be designed to meet the seismic safety standards of the UBC. Specific design measures may include, but are not limited to, special foundation design, additional bracing and support of upright facilities (e.g., tanks, exhaust stacks), and weighting the pipeline in areas of potential liquefaction. In addition, automated leak detection, isolation, and shutdown controls would limit the secondary effects of equipment damage.

e) Wastewater treatment facilities are available and will be used by the project in accordance with an Industrial Waste Water Discharge permit to be issued by the City. Therefore, alternative wastewater treatment facilities are not required.

Summary of Geology and Soil Mitigation

The plant and pipeline routes will be designed to meet or exceed applicable seismic safety standards, including but not limited to, standards specified in the UBC. Geotechnical surveys will be completed to address site-specific soil conditions at the plant site, gas pipeline route and metering station.

4.8 HAZARDS AND HAZARDOUS MATERIALS

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☒	☐	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☒	☐	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

a) The hazardous materials to be used or stored at the site are turbine and generator lubrication oil, transformer oil, aqueous ammonia, hydraulic starting oil, natural gas, turbine-compressor wash-water wastes, oil/water separator waste, and used oils.

Lube Oil

Each combustion turbine is provided with a lubricating oil system that has a capacity of approximately 60 gallons of synthetic oil; the electric generator lube oil system has a capacity of approximately 250 gallons of mineral oil. Therefore, the total lube oil capacity for the combustion turbine generator set is 370 gallons (120 gallons of synthetic oil for both turbines and 250 gallons of mineral oil for the generator).

Transformer Oil

The generator step-up transformer contains approximately 5,000 gallons of transformer oil to be used for cooling and insulation purposes. Two auxiliary transformers are also provided with oil capacities of approximately 700 gallons and 200 gallons respectively. All three transformers will be provided with concrete secondary containment areas to contain any oil spill from the transformer during maintenance or in the unlikely event of a leak.

Hydraulic Oil

The combustion turbine generator starter set is started by means of a hydraulic starting system. This hydraulic system has a capacity of approximately 70 gallons of hydraulic fluid. This hydraulic start pac will have a drain to remove any waste oil that may collect in the case of a leak. This waste will be sent to the wash down storage tank.

Aqueous Ammonia

An aqueous ammonia solution of 19% ammonia and 81% water will be stored onsite in a 12,000-gallon storage tank located above ground. This aqueous ammonia will be vaporized and injected into the SCR system as part of a process to reduce the NO_x emissions from the plant. In general, the aqueous ammonia system will meet all requirements, as well as dilution and containment criteria as set forth in California Fire Code and NFPA Fire Codes. Specifically, the aqueous ammonia storage tank, as well as the ammonia loading/unloading station, will be placed inside a containment area. This ammonia storage tank will incorporate two pressure safety valves set at 15 psig to prevent over-pressurization of the tank. Additionally, a vacuum breaker safety valve set at –3.5 inches water column is installed to prevent a vacuum being obtained inside the tank. To

facilitate safe and proper operation, the tank will also be outfitted with pressure, temperature, and level indicators.

Aqueous ammonia will be delivered onsite by a local supply company in 6,000-gallon trucks that will travel along public roads permitted for hazardous materials transport.

Natural Gas

Clean burning natural gas will be used as the primary source of fuel energy needed to generate electric power from the plant. The natural gas will be delivered to the site via a new gas pipeline, where it will be compressed through the gas compressors to increase its pressure to meet the turbine requirements.

Liquefied Natural Gas (LNG)

If necessary, LNG will be used as a temporary fuel source until the natural gas interconnection is complete. If temporary use of LNG is necessary, then LNG will be stored onsite in three 10,000-gallon tank storage trailer systems located above ground. In general, the location and operation of LNG trailers will be determined during final design and will comply with applicable health and safety standards, including NFPA 59A. Specific provisions of NFPA 59A are included in Appendix F. LNG will be delivered onsite by a local supply company in 6,000-gallon trucks that will travel along public roads permitted for hazardous materials transport.

Water Wash Wastes and Oil/Water Separator Wastes

All waste from the engine enclosures, which will include water wash chemicals and oils, will be piped and pumped into a wash down storage tank. From here, the waste will be removed with a truck and disposed of at an appropriate waste handling facility.

The plant will be provided with an oil/water separator that will receive wastewater from transformer containment drains and site storm drains. Under normal operations, oily water waste should never be collected in the oil/water separator; however, in the event of a leak, oil may enter the oil/water separator. Any oil that does collect in the oil/water separator will be removed by a vacuum truck and taken to the appropriate facility.

Used lube oil and used transformer oil will be collected, stored, if necessary, and removed from the plant site. The used oils will be sent to the original manufacturer or to an approved oil recycling facility.

b) There should be no reasonably foreseeable accidents involving the release of hazardous materials into the environment other than the potential impact of seismic activity. Safety precautions have been designed, and will be installed in order to mitigate risks associated with a potential accident, including secondary containment around hazardous materials associated with the facility, preparation and implementation of a Spill Prevention Countermeasure and Control (SPCC) Plan, a hazardous materials Business Plan, and a RMP, as discussed below.

The onsite storage and handling of the ammonia creates the possibility of an accidental spill and release of aqueous ammonia, which would evaporate and present a potential off-site public exposure. Aqueous ammonia at a concentration below 20% by weight is not considered a regulated toxic substance under federal Risk Management Program requirements (Title 40 of the CFR, Part 68). Therefore, the proposed project would not be required to submit a RMP to the EPA under federal regulations. However, this aqueous ammonia is considered a regulated substance under California Office of Emergency Services (OES) regulations implementing California Accidental Release Program (CalARP) requirements (California Health and Safety Code Section 2770.1), thus will be required to submit an RMP to the City of Lodi Fire Department under the CalARP regulations. Compliance with CalARP is required prior to operation of the new SCR unit. The RMP is required to include an offsite consequence analysis (OCA) for the worst-case accidental release of ammonia, as well as compliance with hazards and process safety review, training and maintenance, and facility emergency response program requirements.

CalPeaks's CalARP program will include:

- Written standard operating procedures for aqueous ammonia that must be followed during unloading of aqueous ammonia from bulk trucks
- Physical inspection of the facility a minimum of twice per week documented in written inspection logs
- Identification of time periods within which any identified deficiencies will be brought into compliance
- Safety systems that will prevent overfilling of the aqueous ammonia storage tank
- Safety systems that will alert CalPeak to a release before it reaches offsite

- Emergency response plans that will allow immediate notification and action in the event of a release

In addition, the tanker truck delivery of the aqueous ammonia solution will be made on public roads. The number of deliveries expected during peak energy demand (summer months) for this project is about one truck per month. Although the trucking of aqueous ammonia is regulated for safety by the U.S. Department of Transportation and California Department of Transportation, there is a small probability that a tanker truck could be involved in an accident spilling its contents. A precise quantification of this probability would be speculative for the small amount of shipping anticipated for this project, but national accident statistics suggest that the odds of an accident involving a spill from a tanker truck would be on the order of 1 in 10,000, or lower probability. Ammonia would only be delivered during off-peak traffic hours, thereby further decreasing the odds of an accident. Given this, the risk to the public of a hazard posed by the transport of aqueous ammonia to the facility is considered less than significant. This risk can be minimized further by ensuring that a safe route is used. The following mitigation measures are recommended to address these issues:

- A designated haul route shall be used for the delivery of aqueous ammonia to the site, minimizing rail crossings and crossings of busy unprotected intersections, and shall not come within one-quarter mile of an existing or proposed school.

- Deliveries shall not be en route to the site between 7:00 and 9:00 a.m. or between 4:00 and 6:00 p.m. weekdays.

An emergency response plan will be prepared and submitted in the required RMP to address the new ammonia storage and handling facilities. The project would not increase the fire hazard with flammable brush, grass, or trees. The project is not located in a fire hazard area, will be constructed within an existing industrial area, and will meet all relevant fire codes.

Compliance with CalARP is also required prior to operation of the LNG system if the system is onsite for more than 30 days. The CalARP program discussed above for ammonia will include similar provisions for LNG.

Implementation of the project could create a risk of accidental rupture (e.g., agricultural operations or construction excavations) of the pipeline that could lead to an explosion resulting in property damage or fatalities. Data available from the U.S. Department of Transportation – Office of Pipeline Safety indicate that historically, natural gas transmission and distribution lines and associated facilities have a very low probability of a full-scale rupture that could lead to an explosion resulting in property damage or fatalities. In general,

transmission pipelines that have been recently constructed in accordance with minimum federal safety standards are coated to prevent corrosion, are well marked, and are least prone to leaks or other accidents. Nevertheless, because a limited possibility of an accident does exist, several measures have been incorporated into the project design to avoid the accidental rupture of the pipeline. These measures include burial of the pipeline in exceedance of U.S. Department of Transportation standards, with additional cover as determined by future agricultural use such as deep ripping or as negotiated by the landowners to ensure safety during normal agricultural activities. Additionally, in accordance with regulations of the U.S. Department of Transportation's Office of Pipeline Safety, aboveground markers will be placed along the pipeline corridor. These markers will be placed within the line of sight along the pipeline corridor and identify the type of utility and a point of contact in case of emergency.

These measures reduce all potential impacts to below a level of significance.

c) There are no existing or proposed schools within one-quarter mile of the site. The nearest school is approximately one-half mile from the proposed plant site, on the west side of Highway 99.

d) The site is not considered to be a hazardous materials site pursuant to Government Code Section 65962.5. Additionally, a Phase I ESA was prepared in 2002 for the plant site. This ESA did not identify contaminated soils or issues of concern associated with the project site.

e-f) The project is not located within an airport land use plan, within two miles of a public airport, or within the vicinity of a private airstrip. A private airstrip is located approximately five miles north of the proposed plant site.

g) LEEF would not impair the implementation of or physically interfere with any adopted emergency response plan or emergency evacuation plan.

h) There is not a significant risk of wildland fires in relation to the proposed plant. The combustion turbine and generator are housed in an enclosure. This enclosure is monitored and protected by a carbon dioxide fire suppression system.

The plant will have a fire control system that is connected to the City water supply. The water supply system will meet City of Lodi standards, and the number and location of hydrants will meet Fire Marshal approval.

Portable fire extinguishers and fire carts will be provided at buildings and at key locations around the plant.

The generator step-up transformer and the auxiliary transformers will be provided with containment systems that will keep any oil that may leak from a transformer within the containment system.

LNG facilities, if used, will be outfitted with appropriate fire prevention and response features in accordance with NFPA 59A and be included in the CalARP Program Risk Management Program.

Summary of Hazards and Hazardous Materials Mitigation

The plant and gas pipeline will be designed, constructed, and operated in conformance with all applicable laws, ordinances, regulations, and standards, including all applicable industry safety standards, City of Lodi and County of San Joaquin ordinances/standards. The U.S. Department of Transportation's Office of Pipeline Safety standards will be adhered to during the construction and operation of the gas pipeline and associated facilities.

There should be no reasonably foreseeable accidents involving the release of hazardous materials into the environment other than the potential impact of seismic activity. Safety precautions have been designed and will be installed in order to mitigate risks associated with a potential accident, including secondary containment around hazardous materials associated with the facility, preparation and implementation of a SPCC Plan, a hazardous materials Business Plan, and a RMP pursuant to the CalARP Program. LNG facilities, if used, will be outfitted with appropriate fire prevention and response features in accordance with NFPA 59A, and be included in the CalARP Program Risk Management Program.

4.9 HYDROLOGY AND WATER QUALITY

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☐	☒
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☒	☐
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f) Otherwise substantially degrade water quality?	☐	☐	☒	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

a-b) There should be no reasonably foreseeable violations of water quality standards or waste discharge requirements. The plant will be constructed and designed with numerous measures to prevent discharge of potential contaminants offsite. These measures include implementation of a construction SWPPP; equipment enclosures; use of secondary containment around components that use hazardous materials; preparation and implementation of a SPCC Plan; implementation of a hazardous materials Business Plan; and implementation of a RMP pursuant to the CalARP Program.

Directional drilling under the Mokelumne River will serve to prevent potential releases of hydrocarbons into this wetland habitat area. The drilling procedures will include implementation of a frac-out contingency plan that will be reviewed and approved by state and federal biological resource agencies prior to drilling.

Process and Storm Water Discharge

Contaminated waste drains from the engine enclosures, generator enclosure, hydraulic start pac, and the instrument air skid will be piped to and collected in a 2,800-gallon wash-down drainage storage tank. This waste will be removed via a wastewater truck and sent to the appropriate facility, as needed. There will be no wastewater discharge from the demineralizer trailer.

The storm drains from the transformer containment areas as well as the site storm water drainage from operational areas will be directed to an oil/water separator. The treated storm water from the oil/water separator will then be piped into the City sanitary sewer system (this may require using a lift station) in accordance with an Industrial Wastewater Permit, to be issued by the City. Under normal operations, oily waste should never collect in the oil/water separator; however, there is a chance that oil may enter the oil/water

separator. Any oil that does collect in the oil/water separator will be removed by a vacuum truck and taken to the appropriate facility. Storm water in the non-operational areas (e.g., access roads, landscaped areas, and other open areas outside the equipment areas) will drain to the City storm sewer system drain inlets located on Thurman Street.

Construction Storm Water Management

During construction grading, erosion potential is low, due to the flat topography of the plant site and pipeline route. Storm water runoff during construction will be managed under a General NPDES Permit for Construction Activities and SWPPP, which will be developed by CalPeak prior to construction. This plan will be developed for both the plant site, construction equipment and soil staging area, and the pipeline construction disturbance areas. The project will implement construction BMPs, and will employ the protective erosion control measures consistent with those described in the State General Permit for Discharges Associated with Construction Activities and the project SWPPP. Adherence to the guidelines of the NPDES General Permit, the project SWPPP, and other contingency plans will reduce potential surface water quality impacts during project construction to less than significant. The project will obtain all necessary permits for the pipeline construction.

Total annual water demand will be approximately 2 acre-feet per year. Total water discharge will be less than 0.25 acre-feet per year. Table 4-3 provides total annual water demand and water uses. Most of the water will be demineralized and injected into the combustion turbine. No wetlands or "waters of the U.S." occur on or directly adjacent to the project plant site. There are no water uses associated with operation of the gas pipeline.

TABLE 4-3
ANNUAL WATER DEMAND AND USES

Scenario	Total City Water	Demineralized Water	Miscellaneous Uses
6% Annual Capacity Factor, 12 hours/day, 500 hours/year	Acre-Feet/Year 1.84	Acre-Feet/Year 1.29	Acre-Feet/Year 0.55
Water Use 98% Capacity Factor	Average Gallons/Day 14,400	Average Gallons/Day 10,080	Average Gallons/Day 4,320
Annual Average Design Flow	20 GPM	14 GPM	6 GPM

Drainage structures will be in conformance with the City of Lodi and the County of San Joaquin standards to ensure that water quality standards and waste discharge requirements will not be violated.

c-d) Onsite drainages will not involve alteration of natural drainage courses nor substantially increase velocities so as to increase erosion or siltation.

Erosion control BMPs will be described in the project SWPPP and implemented during site and pipeline construction to control runoff. Pipeline right-of-way restoration will begin as soon as the backfill operation is completed.

e) The low quantities of runoff water will not exceed the capacity of existing stormwater drainage systems or provide substantial additional sources of polluted runoff.

f) Adherence to the guidelines of the NPDES General Permit, the project SWPPP, and other contingency plans will ensure that no degradation of water quality would result from project implementation at the plant site or along the pipeline route.

With regard to the pipeline location adjacent to City Well 4R, placement will comply with California Department of Water Resources, Bulletin 74-90, Well Standards. This regulation specifically calls for some degree of separation between pipelines and storage containers and water wells. An acceptable distance of separation between the proposed pipeline and City Well 4R will be maintained. In addition, the pipeline will be constructed of high-yield-strength coated steel pipe and will be cathodically protected from corrosion.

g) No housing is proposed by the project.

h) No aboveground structures are proposed within a 100-year floodplain.

i) All aboveground structures would be placed outside the 100-year floodplain.

j) The proposed project is not near any body of water that would potentially be effected by a seiche, tsunami, or mudflow. It is not anticipated that the proposed project would be susceptible to any of the above natural phenomena.

4.10 LAND USE AND PLANNING

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

a) The project will not physically divide an established community.

b) The proposed project site is designated PQP in the City of Lodi's General Plan and is zoned Heavy Industrial (M-2). The use of the site as an electrical generation facility is consistent with the zoning and General Plan designation. The use of the site for electrical generation is a permitted use within the M-2 zone district. The project as currently designed complies with the specific development standards for development within this zone district. No modifications will be required for the proposed power plant design.

The location of the proposed plant site is consistent with the uses surrounding the project site. The surrounding uses include an electrical substation to the north, industrial facilities to the south, public utilities and industrial facilities to the west, and industrial facilities and vacant land to the east. Residential uses are present along Cluff Street, but these are legal non-conforming in an industrial zoned area. They will be allowed to remain, but will not be allowed to expand and will remain as an industrial zoned area.

The two proposed routes for the fuel gas supply pipeline involve locating the gas pipeline within areas zoned for Agriculture by San Joaquin County. However, the locations proposed for the pipeline minimize any potential impacts to existing and future agricultural uses. In addition, utilities are a permitted use in the Agricultural Zoning Districts for San Joaquin County. The operation of a pipeline in the proposed locations is consistent with the City of Lodi and San Joaquin County General Plans.

The above ground metering station is proposed to be located within APN 017-080-54 or APN 017-080-64. Either a 0.08 or 0.12 acre portion, of one of these parcels is proposed to be placed in an easement for the construction and operation of an above ground metering station. Above ground structures will be limited to a meter and pig launching facility. The proposed sites are zoned for agriculture by San Joaquin County. Utilities are a permitted use in the Agricultural Zoning Districts for San Joaquin County. As a result, the operation of the proposed metering station is consistent with the City of Lodi and San Joaquin County General Plans.

The CCT Route for the gas pipeline is completely within existing right-of-way and railroad easement areas. The Western Route will include a portion of the route that will need to cross an existing area that is in active agriculture. Where the pipeline route needs to cross this agricultural property, the pipeline will be placed approximately six to eight feet below existing grade, and the easement will utilize an existing agricultural access road. Construction impacts are minimized by using this existing agricultural road for equipment storage and staging, which allows for minimal impacts to existing agricultural practices. Agricultural uses will be maintained within the easement area once the pipeline is placed within the easement corridor. Periodic inspections will not disrupt agricultural practices, and maintenance and repair will be allowed as needed. Any impacts to crops will be replaced as necessary. The site for the proposed metering station on the Thomas property is currently in active agricultural production. The site location on the Corda property is fallow land. Both sites will change to a utility use during construction and operation of the proposed project. However, both locations for the metering station have been determined based on their accessibility. They are immediately adjacent to Highway 99. Access to the metering station will be provided by a driveway from the County frontage road. Operations and maintenance vehicles will park inside the fenced area. These measures will minimize potential impacts to the existing agricultural uses. As a result, the proposed power project, associated gas pipeline, and metering station are consistent with zoning requirements and General Plan goals and policies for both the City of Lodi and San Joaquin County.

c) As discussed in the Biological Resources section, the SJCOG created a voluntary MSCP to address management of critical species habitat and open space. Open space consists of (1) agricultural lands, (2) natural lands other than wetlands such as oak woodlands, grasslands, and scrub, (3) vernal pool natural lands, (4) and wetlands other than vernal pools.

The key purpose of the SJMSCP is to provide a strategy for balancing the need to convert Open Space to non-Open Space uses while protecting the region's agricultural economy.

The proposed project will not convert open space (inclusive of agriculture) to another land use category. The plant site is zoned industrial, and therefore will not be subject to the required compensation ratio or mitigation fee contained in the SJMSCP. The pipeline route will not require a conversion of agricultural uses to another land use as well. Therefore, the proposed project is not in conflict with the SJMSCP.

Summary of Land Use Mitigation

The use of the plant site as an electrical generation facility is consistent with the Industrial zoning and General Plan designation of the site. No modifications are necessary for the design and layout of the plant. The proposed pipelines are consistent with the Agricultural zoning of the areas and will not conflict with the existing agricultural operations. The pipelines will primarily be placed within existing road right-of-ways and railroad easements which will minimize any potential conflicts with agricultural operations. Pipelines having to be placed within agricultural areas will be placed six to eight feet below existing grade, unless an alternate depth is agreed to with the landowner, and the utility easements will incorporate an existing farm access road to further reduce any potential conflicts with agricultural operations. The construction and operation of the above ground metering station is consistent with the Agricultural zoning of the area and will not conflict with existing agricultural uses. No land use impacts will result from the construction or operation of the proposed power facility.

4.11 MINERAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

a-b) No mineral resources of value or local importance are recorded to be in or near the project site.

4.12 NOISE

Would the project result in:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Responses to items a) through f) are provided in the following noise analysis. This analysis describes the existing noise environment onsite and in the vicinity of the proposed project, and assesses potential noise impacts associated with the proposed project. Noise-sensitive receptors that may be affected by noise are identified, as well as the laws, ordinances, regulations, and standards that regulate noise levels at those receptors. The following discussion describes the fundamentals of acoustics, the results of a detailed site reconnaissance, sound level measurements, acoustical calculations, and an assessment of potential noise impacts from construction and operations.

Affected Environment

Fundamentals of Acoustics

Noise is generally defined as loud, unpleasant, unexpected, or undesired sound that is typically associated with human activity and which interferes with or disrupts normal activities. Although exposure to high noise levels has been demonstrated to cause hearing loss, the principal human response to environmental noise is annoyance. The response of individuals to similar noise events is diverse and influenced by the type of noise, perceived importance and suitability of the noise in a setting, time of day and type of activity during which the noise occurs, and sensitivity of the individual.

Sound is a physical phenomenon consisting of minute vibrations, which travel through a medium such as air and are sensed by the human ear. Sound is generally characterized by a number of variables including frequency and intensity. Frequency describes the sound's pitch and is measured in Hertz (Hz), while intensity describes the sound's loudness and is measured in decibels (dB). Decibels are measured using a logarithmic scale. A sound level of 0 dB is approximately the threshold of human hearing and is barely audible under extremely quiet listening conditions. Normal speech has a sound level of approximately 60 dB. Sound levels above about 120 dB begin to be felt inside the human ear as discomfort and eventually pain at still higher levels. The minimum change in the sound level of individual events that an average human ear can detect is about 3 dB. A change in sound level of about 10 dB is usually perceived by the average person as a doubling (or halving) of the sound's loudness; this relation holds true for loud sounds and for quieter sounds.

Because of the logarithmic nature of the decibel unit, sound levels cannot be added or subtracted directly and are somewhat cumbersome to handle mathematically. However, some simple rules of thumb are useful in dealing with sound levels. First, if a sound's intensity is doubled, the sound level increases by 3 dB, regardless of the initial sound level. Thus, for example: 60 dB + 60 dB = 63 dB, and 80 dB + 80 dB = 83 dB.

The frequency is a measure of how many times each second the crest of a sound pressure wave passes a fixed point. For example, when a drummer beats a drum, the skin of the drum vibrates at a certain number of times per second. A particular tone that makes the drum skin vibrate 100 times per second generates a sound pressure wave that is oscillating at 100 Hz, and this pressure oscillation is perceived as a tonal pitch of 100 Hz. Sound frequencies between 20 Hz and 20,000 Hz are within the range of sensitivity of the best human ear.

Sound from a tuning fork (a pure tone) contains one single frequency; however, most sounds heard in the environment do not consist of a single frequency, but rather a broad band of

frequencies differing in sound level. The method commonly used to quantify environmental sounds consists of evaluating all of the frequencies of a sound according to a weighting system that reflects that human hearing is less sensitive at low frequencies and extremely high frequencies than at the mid-range frequencies. This is called A-weighting, and the decibel level measured is called the A-weighted sound level (dBA). In practice, the level of a noise source is conveniently measured using a sound level meter that includes a filter corresponding to the dBA curve.

Although the A-weighted sound level may adequately indicate the level of environmental noise at any instant in time, community noise levels vary continuously. Most environmental noise includes a conglomeration of noise from distant sources that create a relatively steady background noise in which no particular source is identifiable. A single descriptor called the equivalent sound level (L_{eq}) is used. L_{eq} is the energy-mean A-weighted sound level during a measured time interval. It is the "equivalent" constant sound level that a given source would need to produce to equal the fluctuating level measured. In addition, it is often desirable to know the acoustic range of the noise source being measured. This is accomplished through the L_{max} and L_{min} indicators. They represent the root-mean-square maximum and minimum obtainable noise levels during the monitoring interval. The L_{min} value obtained for a particular monitoring location is often called the "acoustic floor" for that location.

To describe the time-varying character of environmental noise, the statistical noise descriptors L_{10}, L_{50}, and L_{90} are commonly used. They are the noise levels equaled or exceeded 10, 50, and 90% of the measured time. Sound levels associated with the L_{10} typically describe transient or short-term events, while levels associated with the L_{90} describe the steady-state (or most prevalent) noise conditions. Sound levels of typical noise sources and environments are provided in Table 4-4 to provide a frame of reference.

Zoning/Land Use

The project site is located in the City of Lodi, which is responsible for zoning and planning in the project vicinity. The City owns the proposed power plant site, located at 1215 Thurman Street. The property is zoned M-2 (Heavy Industrial) and is specified as land use PQP in Lodi's General Plan. The nearest properties to the proposed site are zoned either M-1 (Light Industrial) or M-2, and are specified as land use L1 (Light Industrial) or H1 (Heavy Industrial). Some properties near the proposed plant (approximately 800 and 1,800 feet north of the site) are located in the M-2 zone and appear to be used for residential purposes.

The nearest residentially zoned (R1 – Single-Family Residential) properties in the City are located approximately 2,200 feet southwest of the proposed plant, between Cherokee Lane

TABLE 4-4
SOUND LEVELS OF TYPICAL NOISE SOURCES AND NOISE ENVIRONMENTS (A-WEIGHTED SOUND LEVELS)

Noise Source (at a Given Distance)	Scale of A-Weighted Sound Level in Decibels	Noise Environment	Human Judgment of Noise Loudness (Relative to a Reference Loudness of 70 Decibels*)
Military Jet Take-off with After-burner (50 ft)	140		
Civil Defense Siren (100 ft)	130	Carrier Flight Deck	
Commercial Jet Take-off (200 ft)	120		Threshold of Pain *32 times as loud
Pile Driver (50 ft)	110	Rock Music Concert	*16 times as loud
Ambulance Siren (100 ft) Newspaper Press (5 ft) Power Lawn Mower (3 ft)	100		Very Loud *8 times as loud
Motorcycle (25 ft) Propeller Plane Flyover (1,000 ft) Diesel Truck, 40 mph (50 ft)	90	Boiler Room Printing Press Plant	*4 times as loud
Garbage Disposal (3 ft)	80	High Urban Ambient Sound	*2 times as loud
Passenger Car, 65 mph (25 ft) Living Room Stereo (15 ft) Vacuum Cleaner (3 ft) Electronic Typewriter (10 ft)	70		Moderately Loud *70 decibels (Reference Loudness)
Normal Conversation (5 ft) Air Conditioning Unit (100 ft)	60	Data Processing Center Department Store	*1/2 as loud
Light Traffic (100 ft)	50	Private Business Office	*1/4 as loud
Bird Calls (distant)	40	Lower Limit of Urban Ambient Sound	Quiet *1/8 as loud
Soft Whisper (5 ft)	30	Quiet Bedroom	
	20	Recording Studio	Just Audible
	10		Threshold of Hearing
	0		

Source: Compiled by URS Corporation

and State Route (SR) 99. Other nearby residentially zoned properties in the City are located approximately 2,800 feet due west of the proposed plant.

Other nearby potentially affected properties are located outside of the City boundaries, in the unincorporated portion of San Joaquin County. These properties are zoned for Agricultural Use, but contain sparsely located residences. The nearest residences in the County are located approximately 2,100 feet east of the proposed power plant.

Noise Limits

City of Lodi

Noise regulations pertinent to receivers within the City are presented in Chapter 9.24 of the City's Municipal Code (LMC 9.24). LMC 9.24.030C specifies that noise from individual or corporate sources shall not exceed the ambient noise level at residential property lines by more than five dB between the hours of 10 p.m. and 7 a.m. LMC 9.24.010A defines ambient noise as "the all-encompassing noise associated with a given environment, usually being a composite of sounds with many sources near and far as determined at any specific point."

The noise descriptor and length of time used to describe the ambient noise level is not specified in the City code. The one-hour L_{eq} was used to describe the ambient noise level, because this noise descriptor includes all sounds and returns an average sound level describing the overall noise environment during a specific time period. The use of both the L_{eq} and a one-hour time interval are consistent with the approach used by San Joaquin County, as well as most agencies.

The City does not have specific regulations concerning the sound level limit for construction activity.

County of San Joaquin

Noise regulations pertinent to receivers within the unincorporated portions of the County are presented in the County's General Plan and in Section 9-1025.9 of the County Code (SJCC 9-1025.9).

The San Joaquin County General Plan indicates that stationary noise sources shall be restricted to an hourly L_{eq} of 50 dBA during the daytime and 45 dB during the nighttime at sensitive receivers (e.g., residences). Maximum sound levels (L_{max}) from stationary noise sources shall be restricted to 70 dB during the daytime and 65 dB during the nighttime. Because the noise sources associated with the power plant would be fairly continuous with few maximum events, the limiting noise level would be the nighttime 45 dBA L_{eq}, and this analysis focuses only on the predicted L_{eq}.

The sound level limits specified in SJCC 9-1025.9 reiterate the sound level limits discussed in the General Plan, and define daytime as 7 a.m. to 10 p.m. and nighttime as 10 p.m. to 7 a.m.

The County's Noise Ordinance states that construction noise sources are exempt from regulation between 6:00 a.m. and 9:00 p.m. on any day.

State of California

The State of California has no noise regulations directly applicable to stationary sources.

Existing Conditions

Some land uses are considered sensitive to noise. Noise-sensitive receptors are land uses associated with indoor and/or outdoor activities that may be subject to stress and/or significant interference from noise. They often include residential dwellings, mobile homes, hotels, motels, hospitals, nursing homes, educational facilities, and libraries. Industrial, commercial, agricultural, and urban reserve land uses are generally not considered sensitive to ambient noise. The sensitive receptors identified for the proposed project are single-family residences in the vicinity at varying distances from the project.

Existing sound levels were measured at three locations in the project vicinity to obtain a noise profile of the area. Three American National Standards Institute (ANSI) Type I integrated sound level meters were used for the noise monitoring; each had been factory calibrated within the past 12 months and were field calibrated prior to the measurements. Sound levels were measured over a 24-hour period in August 2001. The results of the measurements are summarized in Table 4-5; detailed results are tabulated in Tables 4-6, 4-7, and 4-8. The locations of the sound level measurements are displayed in Figure L-1 (see Appendix L).

On the afternoon and night of August 20, 2002, one 15-minute daytime ambient sound level measurement was taken at each boundary line of the project site, and one nighttime measurement was taken at the north, south, and west boundary lines. A one-hour measurement was taken at the east property line, as this location benefited the least from shielding by nearby structures, and therefore best represented the ambient noise level in the project area. A Larson Davis Model 820 Type 1 Integrating Sound Level Meter (Serial # 1323, Calibrated 06/03/02), calibrated with a Larson Davis Model CAL150B ANSI Type 2 Precision Acoustic Calibrator (Serial # 2233, Calibrated 04/23/02), was used as the data collection device for the measurements. The meter was calibrated before and after each

TABLE 4-5
MEASURED EXISTING SOUND LEVELS (DBA)

Measurement Location		Range of L_{eq}s	Range of L_{max}s	Range of L_{90}s	Existing L_{dn}
SLM1	Day	52-56	71-87	46-48	57
	Night	45-53	59-77	42-47	
SLM2	Day	56-62	69-85	51-56	62
	Night	54-59	65-73	46-55	
SLM3	Day	47-67	59-89	42-49	58
	Night	48-54	57-58	45-51	

This report assumes that daytime hours are from 7 a.m. to 10 p.m. and nighttime hours are from 10 p.m. to 7 a.m.

SLM1: Located in the front yard of 524 Hilborn Street. This location represents numerous residential properties west of Cherokee Lane. The dominant source of noise was traffic on Cherokee Lane. More distant traffic noise from SR99 also contributed to the background sound level. Other noise sources included residential maintenance and yard work activities, children playing nearby, and traffic on Hilborn Street.

SLM2: Located in the front yard of 947 Woodrow Street. This location represents the nearest residential properties to the proposed power plant, located between SR99 and Cherokee Lane. The dominant source of noise was traffic on SR99. Other noise sources included residential maintenance and yard work activities, children playing nearby, dogs, and traffic on local roadways.

SLM3: Located in the far southeast corner of the Lodi Memorial Park & Cemetery, adjacent to a residential location in unincorporated San Joaquin County. This location represents the existing noise environment at the nearest residential uses located in unincorporated San Joaquin County. Existing noise sources included traffic traveling on distant roadways, trucks entering the industrial facility to the south, and distant cemetery maintenance activities.

Source: MFG, Inc.

measurement period. The results of these measurements, including locations and times, are summarized in Table 4-9.

The noise sources during all measurements included the CertainTeed plant to the west, the Schaefer plant to the south, the Sweetener Products plant to the southwest, traffic on SR 99, Beckman Road, and Thurman Street, nearby birds, sprinklers, wind, and distant train traffic.

Local Sound Level Limits at Nearest Residential Properties

Noise from all of the potential noise sources operating at the proposed LEEF would need to meet either the City of Lodi or San Joaquin County noise limits at the nearest potentially affected residential properties. Table 4-10 displays the applicable noise limits at each of the nearest potentially affected residential properties.

TABLE 4-6
SOUND LEVEL MEASUREMENT RESULTS

SLM1 524 Hilborn Street, Residences just west of Cherokee Lane					
Date	Time	L_{eq}	L_{max}	L_{min}	L_{90}
6-Aug	11:00:00	52.9	75.1	43.7	47.1
6-Aug	12:00:00	52.3	71.4	45.3	47.6
6-Aug	13:00:00	52.8	76.3	45	47.7
6-Aug	14:00:00	53.6	73	45.3	48.1
6-Aug	15:00:00	53.7	76.2	44.5	47.4
6-Aug	16:00:00	52.6	74.4	44.1	47.3
6-Aug	17:00:00	53.7	73.8	44.4	47.4
6-Aug	18:00:00	52	72.9	44.7	47.3
6-Aug	19:00:00	53.9	73.7	45.2	48
6-Aug	20:00:00	56.1	87.3	45.3	47.5
6-Aug	21:00:00	54.6	81.9	45.4	47.2
6-Aug	22:00:00	50.2	72.9	42	44.7
6-Aug	23:00:00	49.4	76.9	39.7	42.1
7-Aug	0:00:00	45.5	62.8	39.4	41.9
7-Aug	1:00:00	45	60.9	40.4	42.3
7-Aug	2:00:00	50.4	76.6	39.8	42.7
7-Aug	3:00:00	44.7	59.3	39.3	41.7
7-Aug	4:00:00	50	74.9	39.8	42.1
7-Aug	5:00:00	50	77.6	44	45.7
7-Aug	6:00:00	53.1	77	45.4	47.2
7-Aug	7:00:00	55.6	75.7	45	47
7-Aug	8:00:00	51.7	71.9	44	46.5
7-Aug	9:00:00	53.1	78.8	43.1	46.2
7-Aug	10:00:00	54.6	79.2	43.9	47.2
			L_{dn} 56.8		

Source: MFG. Inc.

Environmental Consequences

Noise would be produced during the construction and operation phases of this project. Potential noise impacts from these activities are assessed in this section.

Construction Noise

Plant construction would result in a short-term temporary increase in the ambient noise level. Noise would result from the operation of construction equipment. The increase in noise level would be experienced primarily close to the noise source. The magnitude of the impact would depend on the type of construction activity, the noise level generated by various pieces

TABLE 4-7
SOUND LEVEL MEASUREMENT RESULTS

SLM2 947 Woodrow Street, Residences between SR99 and Cherokee Lane					
Date	Time	L_{eq}	L_{max}	L_{min}	L_{90}
6-Aug	12:00:00	57.2	82.5	44.8	52.6
6-Aug	13:00:00	57.6	81.8	48.4	52.8
6-Aug	14:00:00	58.1	81.7	48.6	53.7
6-Aug	15:00:00	58.9	79.4	46.8	54.2
6-Aug	16:00:00	58.2	74.6	49.9	54.5
6-Aug	17:00:00	58.2	74.8	49.7	54.1
6-Aug	18:00:00	62	85.2	47.9	53.5
6-Aug	19:00:00	57.6	80.4	48.8	52.7
6-Aug	20:00:00	57.9	76.1	46.7	51.9
6-Aug	21:00:00	55.8	69.1	46.6	51.1
6-Aug	22:00:00	55.3	67.4	43.5	50
6-Aug	23:00:00	54.9	69.8	43.1	48.5
7-Aug	0:00:00	54.2	67.3	41	46.9
7-Aug	1:00:00	53.6	68.9	40.2	46
7-Aug	2:00:00	53.7	64.7	41.7	46.7
7-Aug	3:00:00	54.2	64.7	41.8	47.6
7-Aug	4:00:00	55.4	73	41.2	49.1
7-Aug	5:00:00	57.2	68.1	46.2	53.4
7-Aug	6:00:00	58.9	72.6	50	55.4
7-Aug	7:00:00	59.3	77.4	49.3	55.8
7-Aug	8:00:00	58.7	73	50.3	55.2
7-Aug	9:00:00	58.1	74.8	48.3	54
7-Aug	10:00:00	59.3	79.3	48.6	54.1
7-Aug	11:00:00	57.9	81.2	48.1	53.1
			L_{dn} 62.6		

Source: MFG, Inc.

of construction equipment, the duration of the construction phase, and the distance between the noise source and receiver. Figure L-2 (see Appendix L) shows average noise levels generated by individual pieces of construction equipment. Plant construction sound levels will typically range from 70 dBA to 90 dBA at 50 feet from the source, and pipeline construction sound levels typically range from 75 dBA to 85 dBA at 50 feet. Construction of the plant and pipeline will be limited to the hours between 7:00 a.m. and 7:00 p.m. The pipeline construction will advance at a minimum rate of approximately 0.15 mile per day, limiting noise exposure to approximately one day at any given location. No pile driving is expected for this project. Noise from construction is considered a short-term adverse, but not significant impact.

TABLE 4-8
SOUND LEVEL MEASUREMENT RESULTS

SLM3 Cemetery/Agricultural Residences in San Joaquin County					
Date	Time	L_{eq}	L_{max}	L_{min}	L_{90}
6-Aug	12:00:00	49.8	68.9	41	43.2
6-Aug	13:00:00	46.5	64	41.4	43
6-Aug	14:00:00	49.9	68.9	42	43.9
6-Aug	15:00:00	66.8	88.7	43.3	45
6-Aug	16:00:00	58.6	84.5	43.2	45.1
6-Aug	17:00:00	46.7	59	42.5	44.3
6-Aug	18:00:00	47	69.7	42.4	44.5
6-Aug	19:00:00	47.9	60.1	43.2	45.4
6-Aug	20:00:00	49.3	60.7	44.7	46.4
6-Aug	21:00:00	51.6	62.7	48	49.3
6-Aug	22:00:00	51.3	61.7	47.2	49
6-Aug	23:00:00	50.1	56.1	46.4	47.8
7-Aug	0:00:00	49.4	60.1	44.7	46.1
7-Aug	1:00:00	47.9	56.9	43.4	45.2
7-Aug	2:00:00	49	66.9	42.8	45.3
7-Aug	3:00:00	48.8	58.5	45.3	47.1
7-Aug	4:00:00	50.2	64.9	45.9	47.2
7-Aug	5:00:00	50.7	56.6	47.4	49.3
7-Aug	6:00:00	53.9	67.5	49.4	51.3
7-Aug	7:00:00	52.7	68.1	46.5	48.5
7-Aug	8:00:00	48	64.6	43.6	44.7
7-Aug	9:00:00	47.9	62.1	42	43.7
7-Aug	10:00:00	47.2	63.5	40.6	42.2
7-Aug	11:00:00	46.6	62.7	40.5	42.5
			L_{dn} 58.4		

Source: MFG, Inc.

TABLE 4-9
MEASURED PLANT BOUNDARY LINE SOUND LEVELS

	Location	Time	L_{eq}	L_{max}	L_{min}	L_{10}	L_{50}	L_{90}
ML1	North Property Line	18:32-18:47	59.4	55.8	68.8	61.1	59.4	57.4
ML2	South Property Line	17:55-18:10	60.6	58.4	69.8	61.3	60.4	59.7
ML3	East Property Line	18:51-19:06	59.1	56.1	67.5	60.9	58.4	57.2
ML4	West Property Line	18:12-18:27	56.5	53.1	61.3	57.7	56.4	55.1
ML1	North Property Line	22:55-23:10	57.2	54.2	61.8	59.3	56.6	55.3
ML2	South Property Line	22:18-22:33	60.0	58.3	70.1	60.3	59.4	58.8
ML3	East Property Line	23:15-00:15	55.5	53.5	58.4	56.4	55.4	54.7
ML4	West Property Line	22:36-22:51	55.3	53.8	57.0	55.9	55.3	54.7

Source: URS Corporation

TABLE 4-10
RESIDENTIAL NOISE LEVEL LIMITS

Receptor	Daytime L_{eq}	Nighttime L_{eq}	Daytime L_{max}	Nighttime L_{max}
City of Lodi				
Residences near SLM1	NA	50	NA	NA
Residences near SLM2	NA	59	NA	NA
Residences near SLM3	NA	53	NA	NA
Unincorporated San Joaquin County				
Residences near SLM3	50	45	70	65

The City of Lodi noise limits are applicable between 10 p.m. and 7 a.m. only, and are directly determined from the measured existing noise levels. The lowest measured nighttime Leqs at SLM1, SLM2, and SLM3, were 45, 54, and 48 dBA, respectively. According to the Lodi City Code, the noise level limit at these receptors is the level which is five dBA greater than the lowest measured ambient level. Therefore, the nighttime noise level limit from the power plant is 50 dBA at SLM1, 59 dBA at SLM2, and 53 dBA at SLM3. No noise limits are applicable during daytime hours (7 a.m. to 10 p.m.) within the City of Lodi.

Source: MFG, Inc.

Operation Noise

The proposed power plant would generate noise from a number of sources. Plans for the facility call for one FT8 gas turbine SwiftPac with associated equipment operating in a simple-cycle configuration. Some of this equipment is relatively quiet compared with the other sources, and these quieter sources would not be audible when the louder equipment is operating. Therefore, this evaluation focused on the loudest potential noise sources, which include the gas turbine, CO/SCR catalyst, exhaust stack, main step-up transformer, air compressor, aqueous ammonia forwarding pump and injection control, and the natural gas compressor.

The Cadna/A Noise Prediction Model, a Windows-based software program that predicts and assesses noise levels near industrial noise, was used to estimate the project-generated sound level at the property line of the power plant and at the nearest residential receptors. The model uses industry-accepted propagation algorithms and accepts sound power levels (in decibels re 1 picoWatt) provided by the equipment manufacturer and other sources based on ISO 3740 standards. The calculations account for classical sound wave divergence, plus attenuation factors resulting from air absorption, basic ground effects, and barrier/shielding. Air absorption was under "standard day" conditions of 59°F and 70% relative humidity. The site and surrounding areas were assumed to be flat; therefore, no intervening topographical barrier effects were considered. However, major buildings, tanks, and large equipment were included as barriers.

Calculations were performed using linear octave band sound power levels as inputs from each noise source. The model outputs are in terms of octave band and overall A-weighted sound pressure levels. The modeled noise sources and source sound levels are summarized in Table 4-11. Sound pressure levels presented in the table were converted into sound power levels. The project site configuration was imported into Cadna/A from the project CAD files. The plant was assumed to operate 24 hours per day, so the noise output would be constant regardless of time of day.

TABLE 4-11
SUMMARY OF SIGNIFICANT SOUND SOURCES

Sound Source	Height of Source (ft)	Approximate Sound Pressure Level
FT8 Combustion Turbine Generator	11.5	85 dBA @ 3 feet
CO/SCR Catalyst	45	85 dBA @ 3 feet
Stack Exit	50	85 dBA @ 3 feet
Natural Gas Compressor	12	95 dBA @ 3 feet
Air Compressor	5	85 dBA @ 3 feet
Main Step-up Transformer	10	85 dBA @ 3 feet
Ammonia Forwarding Skid	8	75 dBA @ 3 feet
Ammonia Injection Skid	8	85 dBA @ 3 feet

Source: Energy Services, Inc.

Project-related noise contours at 5 dBA increments between 45 dBA L_{eq} and 90 dBA L_{eq} are depicted in Figure L-3 (see Appendix L). The estimated sound levels at the sensitive receivers are shown in Figure L-4 (see Appendix L); the applicable limits are shown in Table 4-12. Receptor locations R-1 to R-3 are the same as discussed above. Receptor locations R-4 through R-8 include other potentially affected receptors. A description of these receptors is described below:

TABLE 4-12
ESTIMATED SOUND LEVELS AT SENSITIVE RECEPTORS

Receptor	Project Sound Level At Receptors (dBA)	Sound Level Limit (dBA)
R1/SLM1	39	50
R2/SLM2	36	59
R3/SLM3	44	45
R4	39	59
R5	39	59
R6	47	53
R7	42	45
R8	40	45

SLM1/R1 Located in the front yard of 524 Hilborn Street. This location represents numerous residential properties west of Cherokee Lane.

SLM2/R2 Located in the front yard of 947 Woodrow Street. This location represents the nearest residential properties to the proposed power plant, located between SR99 and Cherokee Lane.

SLM3/R3 Located in the far southeast corner of the Lodi Memorial Park and Cemetery, adjacent to a residential location in unincorporated San Joaquin County. This location represents the existing noise environment at the nearest residential uses located in unincorporated San Joaquin County.

R4 Located in the residential area between SR99 and Cherokee Lane. This location is partially protected by a row of houses between it and SR99. The sound levels measured at SLM2 are representative of this location.

R5 Representative of residences in the residentially zoned area between SR99 and Cherokee Lane, which are directly adjacent to SR99. The sound level measurement at SLM2 is being used to represent these residences and is representative of the sound environment in their front yards, where the houses block some of the traffic noise from SR99. However, the measured sound levels at SLM2 are likely to be lower than the backyards of these residences, which abut the highway. The sound level limit determined by the measured levels at SLM2 is, therefore, somewhat conservative for these backyard locations.

R6 This residence is located in an industrially zoned area. It is being included in this analysis to completely evaluate potential noise impacts at nearby sensitive receivers.

R7 Located at the residences nearest SLM3, in unincorporated San Joaquin County. The line of sight from these residences to the proposed power plant would be partially blocked by the large industrial warehouse located to the west of the residences.

R8 Representative of residences in unincorporated San Joaquin County to the southeast of the proposed power plant. These residences would not be protected by an intervening building.

As shown in Table 4-12, the project would produce less noise than allowed at each receptor. Therefore, no significant impacts would occur.

Low frequency groundborne vibration would be imperceptible at approximately 300 feet from the plant. Airborne low frequency vibration would be imperceptible at approximately 1,000 feet from the plant. Although the closest noise sensitive receptor is approximately 800 feet from the plant, intervening buildings lie between the receptor and the project site. Therefore, no significant low frequency noise or vibration impacts would occur. Additionally, the project would result in broadband sound levels without any particular frequency detectable to noise sensitive receptors.

Although potentially contributing incrementally to overall cumulative industrial noise effects in the immediate area, the project will not create a substantial new source of noise.

Proposed Mitigation

No significant impacts were identified; therefore, no mitigation is necessary. This assumes that the project is designed and constructed in accordance with the sound levels indicated in Table 4-11. In order to confirm that actual noise levels are consistent with the model results, a noise monitoring survey will be conducted at the property line when the plant is operating.

4.13 POPULATION AND HOUSING

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

a) The City of Lodi's population, as of January 2001, was 58,600 people. Under a cap established by the City, Lodi's population grows only about 2% per year or less.

No portion of the project would result in the generation of additional population. Once in operation (except during temporary use of LNG, if needed), the facility will be unmanned, providing no additional long-term employment opportunities. No residences are proposed as part of the proposed project, and no extension of services beyond that currently planned for is associated with the proposed project. Therefore, the proposed project would not generate additional population or exceed official regional or local population projections, nor would it induce substantial growth in the area.

b) No housing would be displaced by the proposed project.

c) No people would be displaced by the proposed project.

4.14 PUBLIC SERVICES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
i. Fire protection?	☐	☐	☐	☒
ii. Police protection?	☐	☐	☐	☒
iii. Schools?	☐	☐	☐	☒
iv. Parks?	☐	☐	☐	☒
v. Other public facilities?	☐	☐	☒	☐

a) i) There is not a significant risk of wildland fires in relation to the proposed plant. The combustion turbine and generator are housed in an enclosure. This enclosure is monitored and protected by a carbon dioxide fire suppression system.

The plant will have a fire control system that is connected to the City water supply. The water supply system will meet City of Lodi standards, and the number and location of hydrants will meet Fire Marshal approval.

Portable fire extinguishers and fire carts will be provided at buildings and at key locations around the plant.

The generator step-up transformer and the auxiliary transformers will be provided with containment systems that will keep any oil that may leak from a transformer within the containment system.

If LNG is used, the LNG system will comply with applicable health and safety standards, including NFPA 59A.

ii) The proposed project would not generate population growth; therefore, no new demand would be placed on police protection.

iii) The proposed project would not generate population growth; therefore, no new demand would be placed on schools.

iv) The proposed plant will be unmanned, resulting in no population increase from project implementation. Therefore, no increase in demand for parks or other recreational facilities are anticipated.

v) The proposed project would not generate population growth; therefore, no new demand would be placed on public facilities. Heavy trucks used during construction may result in a minimal increase in the need for roadway maintenance.

4.15 RECREATION

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

a) No population growth would be generated by the proposed project. Therefore, no demand for recreational facilities would occur.

b) No recreational facilities are required as a result of the project.

4.16 TRANSPORTATION/TRAFFIC

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	☐	☐	☒	☐
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☒
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☐	☒
f) Result in inadequate parking capacity?	☐	☐	☐	☒
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☐	☒

a-g) The project's major traffic impact will occur during the two-to-four-month construction phase (first and/or second quarter of 2003) with both contractor vehicles and equipment delivery trucks making frequent trips. Access for construction vehicles will be from Highway 99 and then along Beckman Road to the plant site on Thurman Street.

The turbine and other plant components will be delivered by truck and off-loaded by crane at the plant site. The relatively small number of deliveries will not impact current

traffic patterns and Level of Service along Highway 99 and local roadways and intersections.

Once operations begin, the greatest impact to traffic will be the delivery of aqueous ammonia. Aqueous ammonia deliveries are expected to occur approximately once every two months, for a total of one to two deliveries per year, assuming three months operation (~500 hours). In addition, a demineralizer trailer will make approximately two trips per month, for a total of six trips per year, assuming three months operation (~500 hours). Additionally, if LNG is used to temporarily fuel the facility, an additional five trips per day will be required. These relatively small number of trips will not impact traffic patterns.

The facility will be unmanned at the plant site. An operator will monitor the LEEF from a remote location. Twelve additional vehicle trips per week are planned during normal operations. Minor maintenance periods will be performed on a quarterly basis, with a major maintenance overhaul occurring annually. During maintenance periods, vehicle traffic may involve up to three to ten trips to the site per day for five to ten days.

The estimated number of additional traffic trips generated by the operation of the proposed project is two per day. The existing roadways within the project area have adequate capacity to accommodate the project-generated traffic.

Summary of Transportation/Traffic Mitigation

A construction traffic and transportation control plan will be prepared in coordination with the City of Lodi, County of San Joaquin, and Caltrans to address heavy equipment deliveries, short-term construction traffic, ammonia deliveries during plant operations, and temporary LNG deliveries, if LNG is needed. The traffic and transportation control plan will address the following issues:

- Timing of heavy equipment and building materials deliveries
- Redirecting construction traffic with a flagperson, if required
- Signing and traffic control device placement, if required
- Need for construction work hours and arrival/departure times outside of peak traffic periods

- Ensure access for emergency vehicles to the project site
- Temporary travel lane closure, if required
- Access to adjacent residential and commercial property during the construction of the natural gas pipeline and metering and pig launching facility.

Particular attention will be paid to heavy equipment/truck access to the plant site and the proposed pipeline route, and vehicular and pedestrian safety during hazardous materials transport and loading operations.

4.17 UTILITIES AND SERVICE SYSTEMS

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the projects projected demand in addition to the providers existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the projects solid waste disposal needs?	☐	☐	☐	☒
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

a,b) Discharges from the proposed project will not exceed wastewater treatment requirements of the applicable RWQCB. The City of Lodi has adequate City water to supply the power plant. Project implementation would not require construction of a new water or wastewater facility.

c) No new storm water drainage systems or expansion to existing systems will need to be constructed. Site storm water drainage in the plant operational areas will be directed to an oil/water separator. This treated storm water will be sent to the City of Lodi sanitary sewer system that runs under Thurman Street. This may require using a lift station.

d) Most of the plant process water will be demineralized and injected into the combustion turbine. The City of Lodi has adequate City water to supply the power plant. Project implementation will not require construction of a new water or wastewater facility.

e) A wastewater treatment permit for use of City's sanitary sewer system will be obtained from the City of Lodi.

f) The project will generate a limited amount of solid waste during construction and operation and maintenance of the facility. It is anticipated that the solid waste generated by the project will have less than a significant impact on local solid waste facilities. The amount of solid waste generated by the proposed project would not be substantial or interfere with permitted capacity of nearby landfills.

g) All solid waste will be disposed of in an approved site in compliance with federal, state, city, and county regulations.

The pipeline construction and operation will not necessitate the need for any additional utility services. Pipeline construction will implement appropriate measures to avoid any existing utility lines and disruption to utility services. Pipeline location markers will be located along the pipeline route at utility crossings.

4.18 MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☒	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

a) As described in the previous discussions for each environmental issue area, impacts from the proposed project are considered to be less than significant after the incorporation of mitigation measures into the project design. Mitigation measures and design features are incorporated into the project that reduce impacts associated with the issue areas discussed above, including: aesthetics, agricultural resources, air quality, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, noise, transportation/traffic, and utilities and service systems to less than significant.

b) No long-term significant impacts or incremental accumulation of effects would occur. The proposed project does not incrementally contribute to cumulative impacts.

c) Based on the analysis of all the above questions, it has been determined that there would be no significant direct or indirect effects on human beings, after incorporation of mitigation measures and design features described herein.

4.19 MITIGATION MONITORING AND REPORTING PROGRAM

CalPeak Power will prepare a Mitigation Monitoring and Reporting Program (MMRP) for review and approval by the City of Lodi. The purpose of the MMRP is to establish a formal procedure for carrying out specific monitoring and reporting measures designed to minimize construction and operations-related impacts. The MMRP will document each of the proposed mitigation measures in this MND. For each of the measures, the MMRP will identify the implementation schedule, the party responsible for implementation, and the party responsible for verification. The MMRP will be developed in coordination with the other affected agencies, and will incorporate various monitoring and reporting features, including regular reports on construction activities and mitigation compliance. Implementation of the MMRP will commence at the time of construction and will continue during the life of the project operations.

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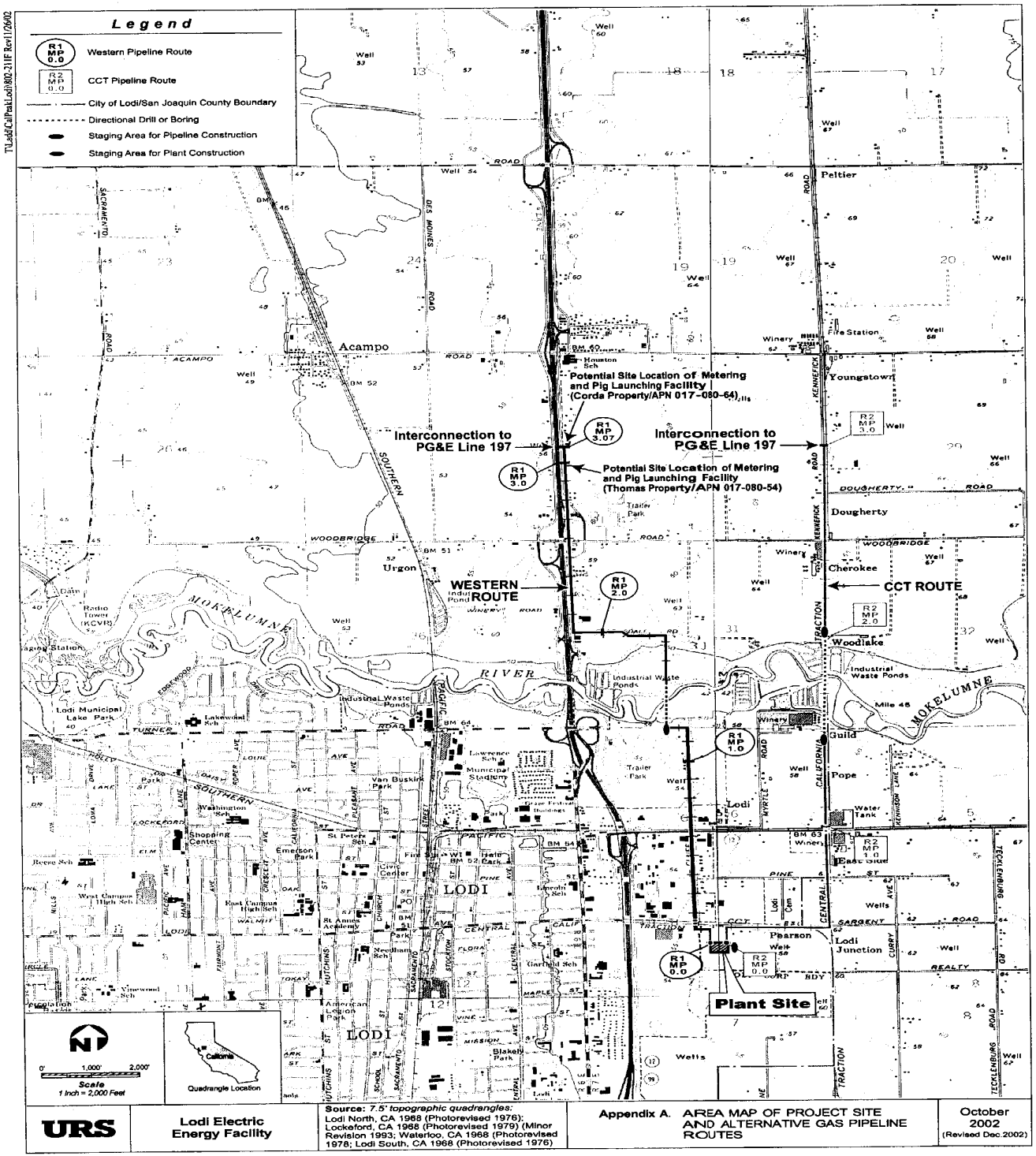
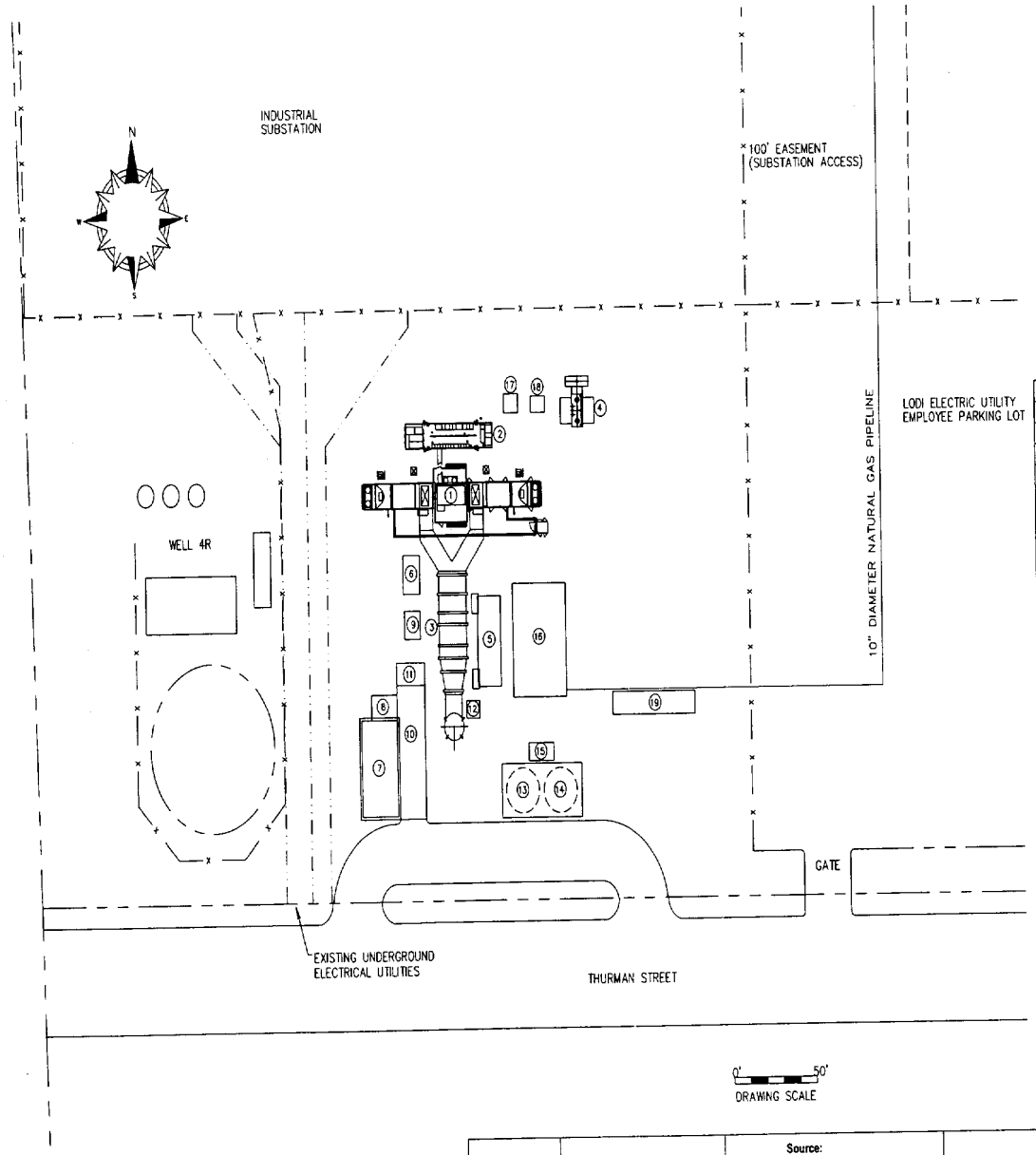
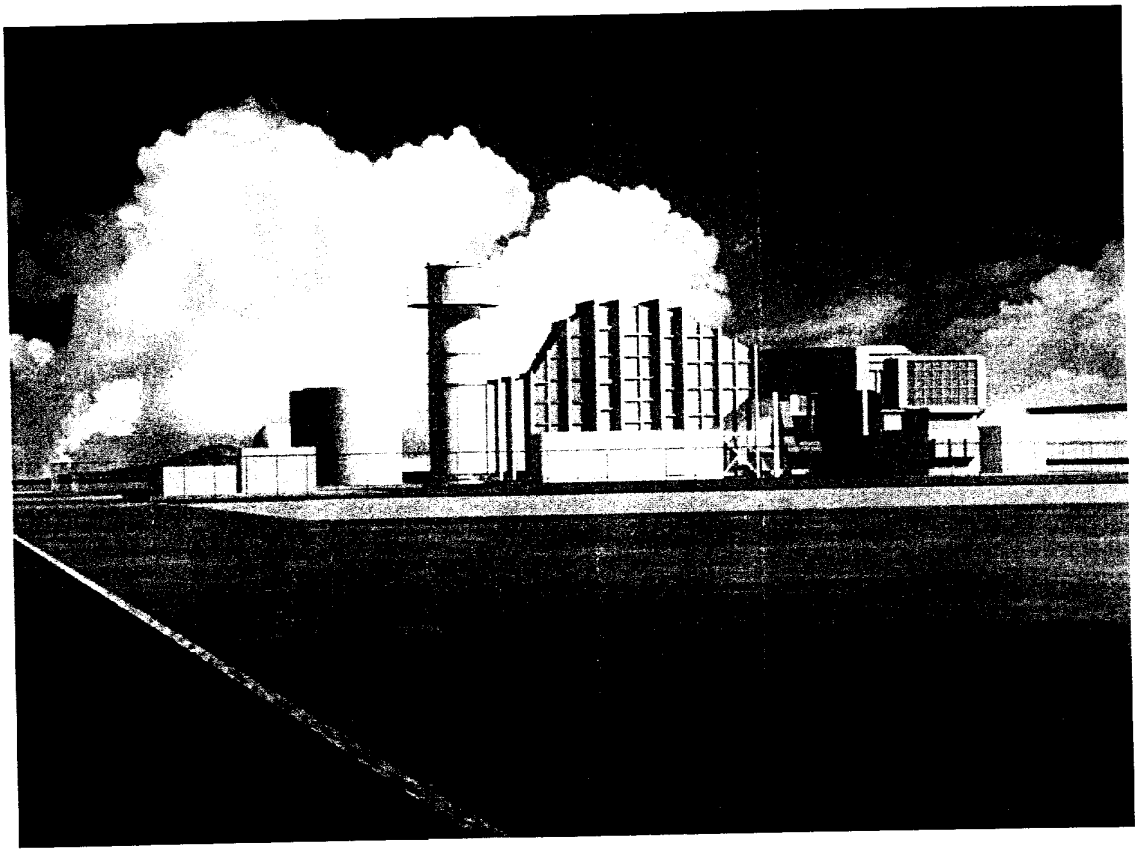

Legend
Western Pipeline Route
CCT Pipeline Route
City of Lodi/San Joaquin County Boundary
Directional Drill or Boring
Staging Area for Pipeline Construction
Staging Area for Plant Construction
Potential Site Location of Metering and Pig Launching Facility (Corda Property/APN 017-080-64)
Interconnection to PG&E Line 197
Interconnection to PG&E Line 197
Potential Site Location of Metering and Pig Launching Facility (Thomas Property/APN 017-080-54)
WESTERN ROUTE
CCT ROUTE
Plant Site
Acampo
Peltier
Youngstown
Dougherty
Cherokee
Woodlake
Guild
Pope
Lodi
Urgon
LODI
Lodi Junction
Pearson
Industrial Waste Ponds
Lodi Municipal Lake Park
Van Buskirk Park
Hutchins Street Square
Blakely Park
Scale 1 Inch = 2,000 Feet
Quadrangle Location
URS
Lodi Electric Energy Facility
Source: 7.5' topographic quadrangles: Lodi North, CA 1968 (Photorevised 1976); Lockeford, CA 1968 (Photorevised 1979) (Minor Revision 1993; Waterloo, CA 1968 (Photorevised 1978; Lodi South, CA 1968 (Photorevised 1976)
Appendix A. AREA MAP OF PROJECT SITE AND ALTERNATIVE GAS PIPELINE ROUTES
October 2002 (Revised Dec.2002)



ITEM	DESCRIPTION	QTY
1	SWIFTPAC50 GAS TURBINE GENERATOR UNIT	1
2	PRIMARY CONTROL ENCLOSURE	1
3	CO/SCR CATALYST	1
4	MAIN STEP-UP TRANSFORMER (13.8 x 60 kV)	1
5	SECONDARY CONTROL ENCLOSURE	1
6	AIR COMPRESSOR SKID	1
7	AQUEOUS AMMONIA TANK & CONTAINMENT AREA	1
8	AQUEOUS AMMONIA FORWARDING PUMP SKID	1
9	AQUEOUS AMMONIA INJECTION CONTROL SKID	1
10	AQUEOUS AMMONIA UNLOADING AREA	1
11	WASH DOWN DRAIN TANK AREA	1
12	CEMS ENCLOSURE	1
13	DEMINERALIZED WATER TANK	1
14	DEMINERALIZED WATER TANK	1
15	WATER PUMP SKID	1
16	NATURAL GAS COMPRESSOR SKID	1
17	AUXILARY TRANSFORMER (13,800 x 480 V)	1
18	AUXILARY TRANSFORMER (13,800 x 4160 V)	1
19	PIG RECEIVER	1

URS	Lodi Electric Energy Facility	Source: Energy Services, Inc. LODI-L-100 Rev. A Dated 12/02/02	Appendix B. SITE PLOT PLAN	December 2002



Lodi Electric Energy Facility URS	**Source:** Energy Services, Inc.	**Appendix C-1.** VIEW OF PLANT FROM THURMAN STREET LOOKING WEST	October 2002 (Revised Dec. 2002)

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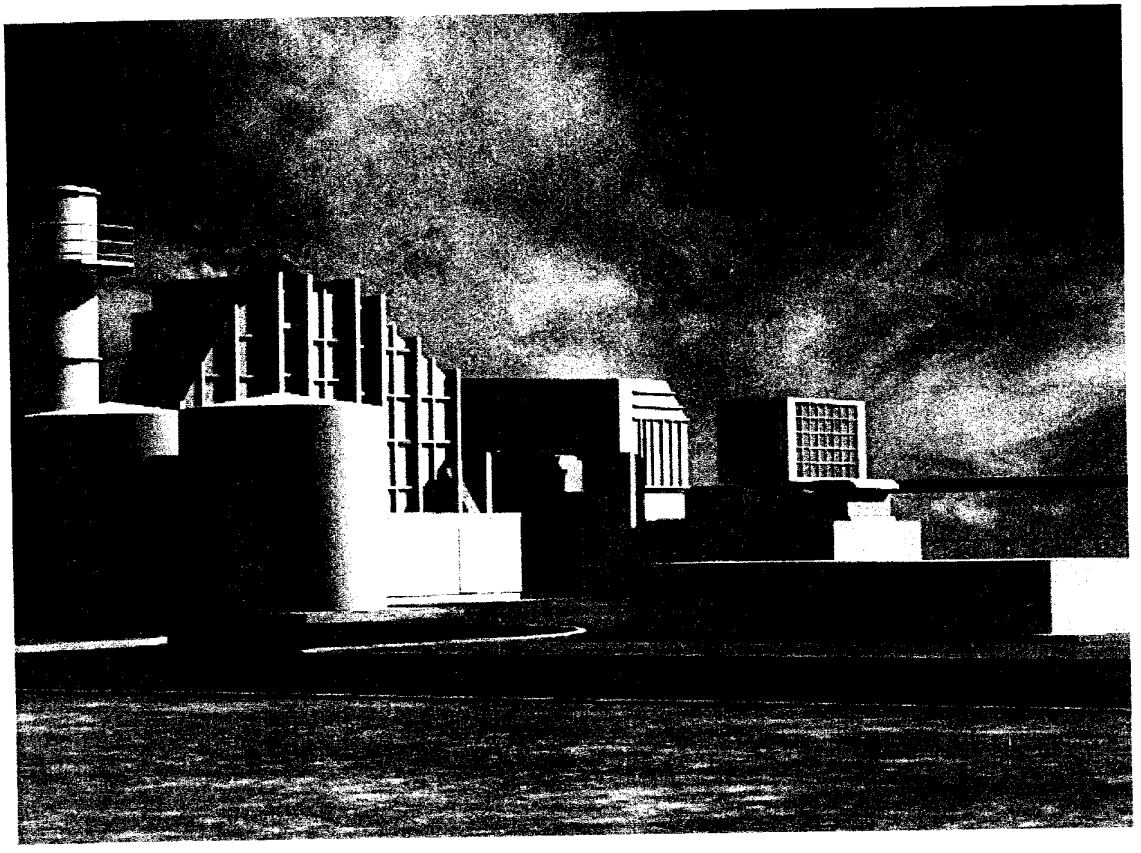
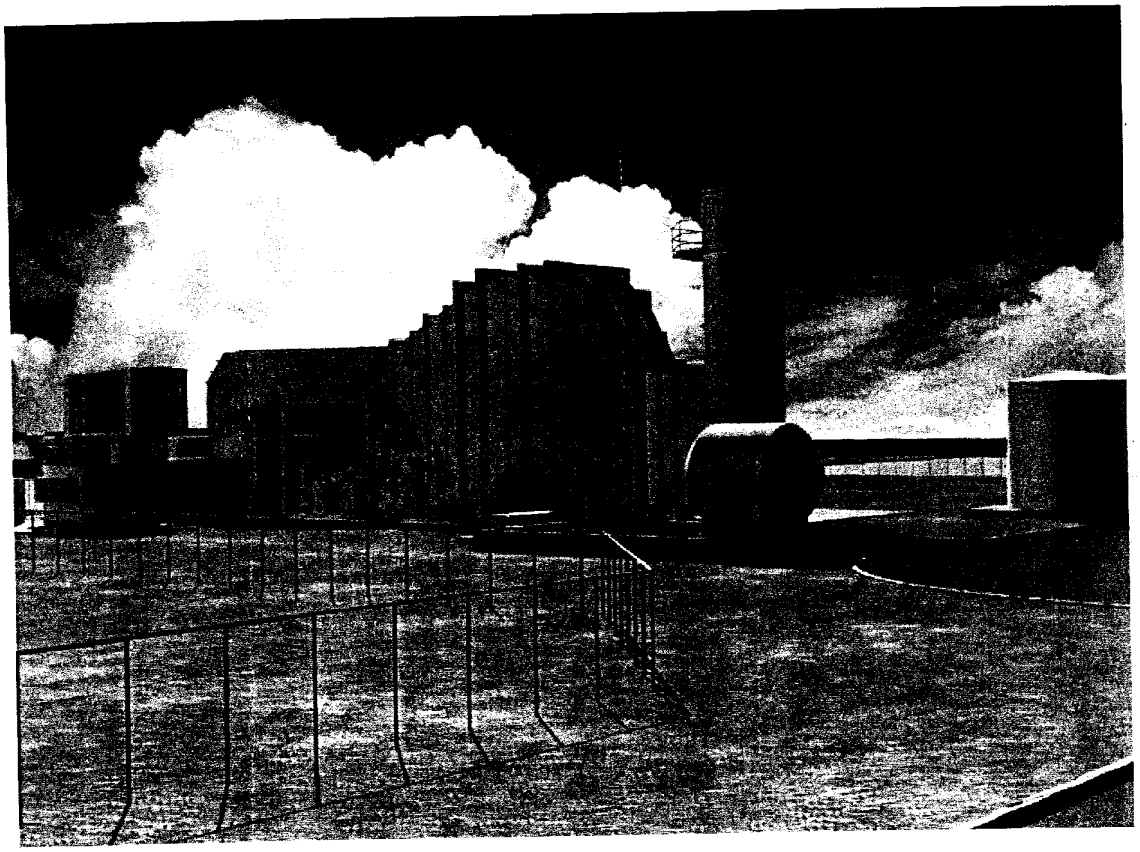
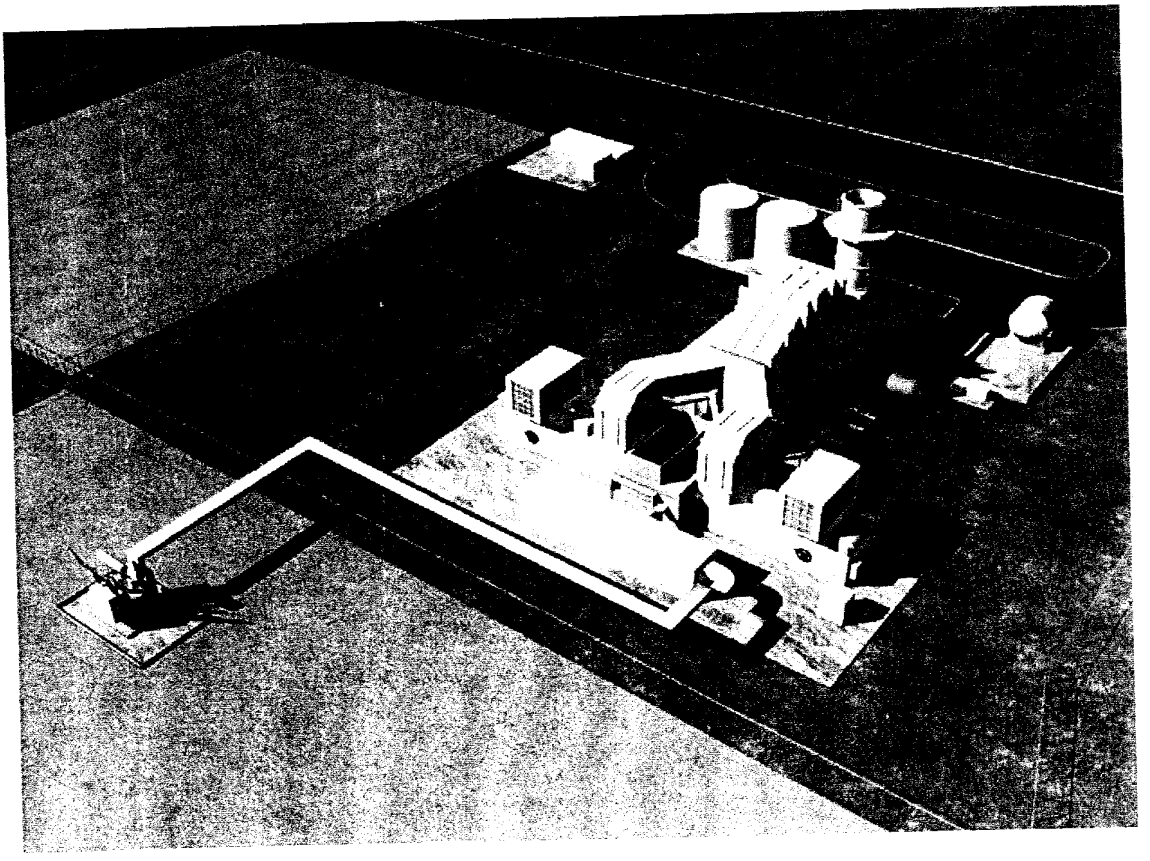


Lodi Electric Energy Facility URS	**Source:** Energy Services, Inc.	**Appendix C-2.** VIEW OF PLANT FROM THURMAN STREET LOOKING NORTHWEST	October 2002 (Revised Dec. 2002)



Lodi Electric Energy Facility URS	**Source:** Energy Services, Inc.	**Appendix C-3.** VIEW OF PLANT FROM THURMAN STREET LOOKING NORTHEAST	October 2002 (Revised Dec. 2002)



Lodi Electric Energy Facility URS	**Source:** Energy Services, Inc.	**Appendix C-4.** AERIAL VIEW OF PLANT LOOKING SOUTHEAST	October 2002 (Revised Dec. 2002)

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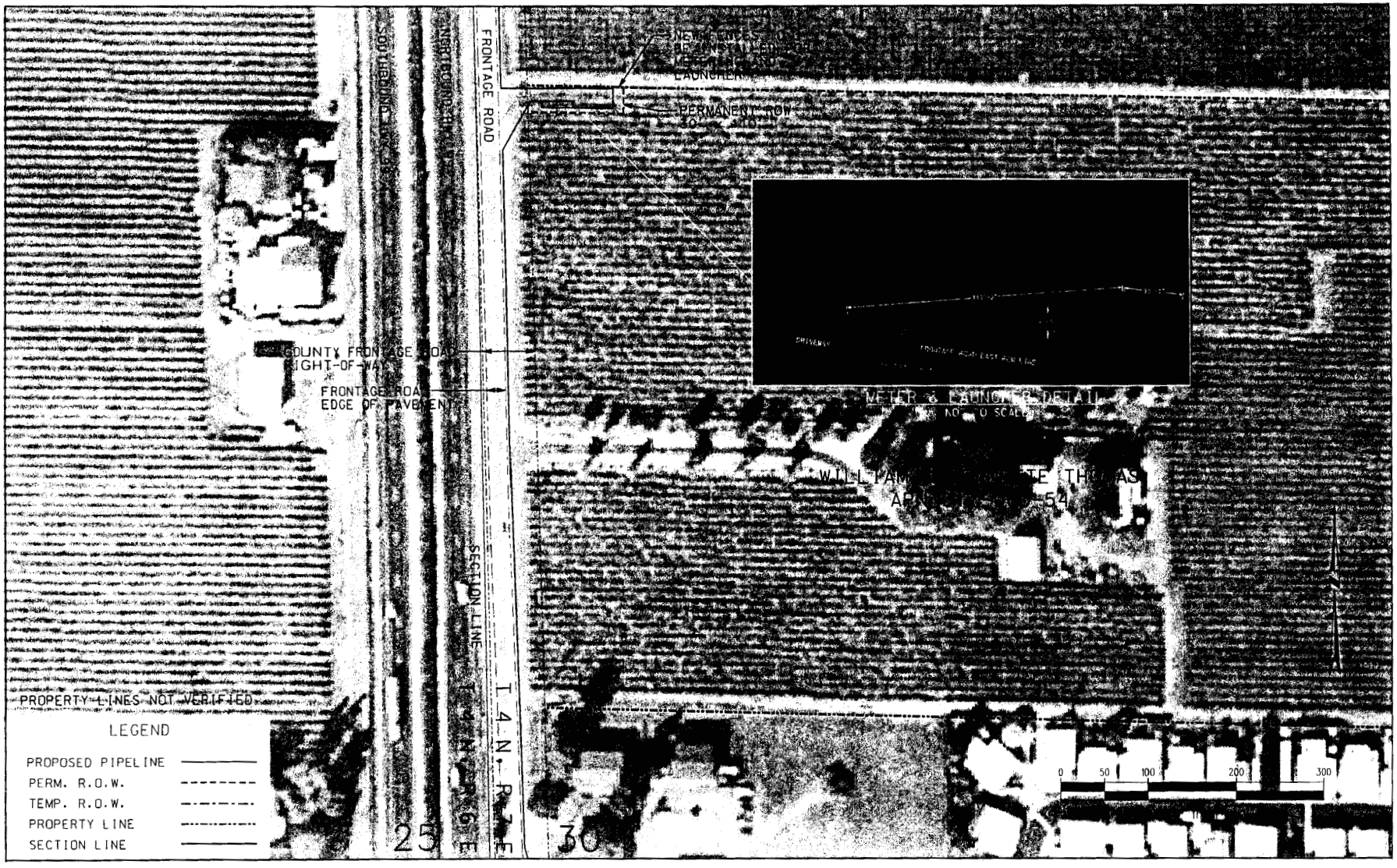

Lodi Electric Energy Facility **URS**	**Source:** Rooney Engineering, Inc.	**Appendix C-5.** POTENTIAL SITE LOCATION OF METERING AND PIG LAUNCHING FACILITY (Thomas Property/APN 017-080-54)	December 2002

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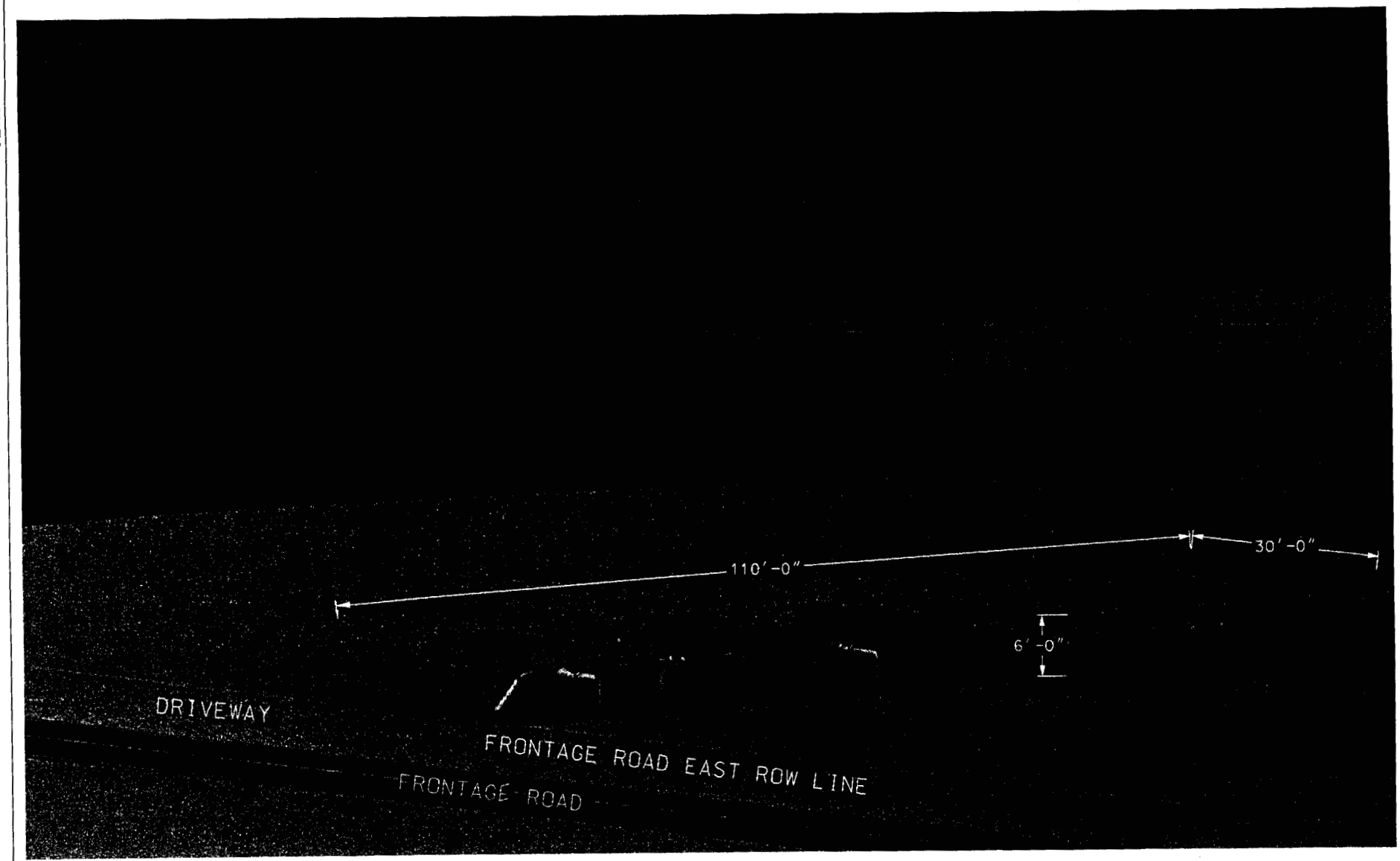

Lodi Electric Energy Facility URS	**Source:** Rooney Engineering, Inc.	**Appendix C-6.** DETAILED VIEW OF METERING AND PIG LAUNCHING FACILITY (Thomas Property/APN 017-080-54)	December 2002

Lodi Electric Energy Facility URS	**Source:** Rooney Engineering, Inc.	**Appendix C-7.** POTENTIAL SITE LOCATION OF METERING AND PIG LAUNCHING FACILITY (Corda Property/APN 017-080-64)	December 2002

Lodi Electric Energy Facility URS	**Source:** Rooney Engineering, Inc.	**Appendix C-8.** DETAILED VIEW OF METERING AND PIG LAUNCHING FACILITY (Corda Property/APN 017-080-64)	December 2002

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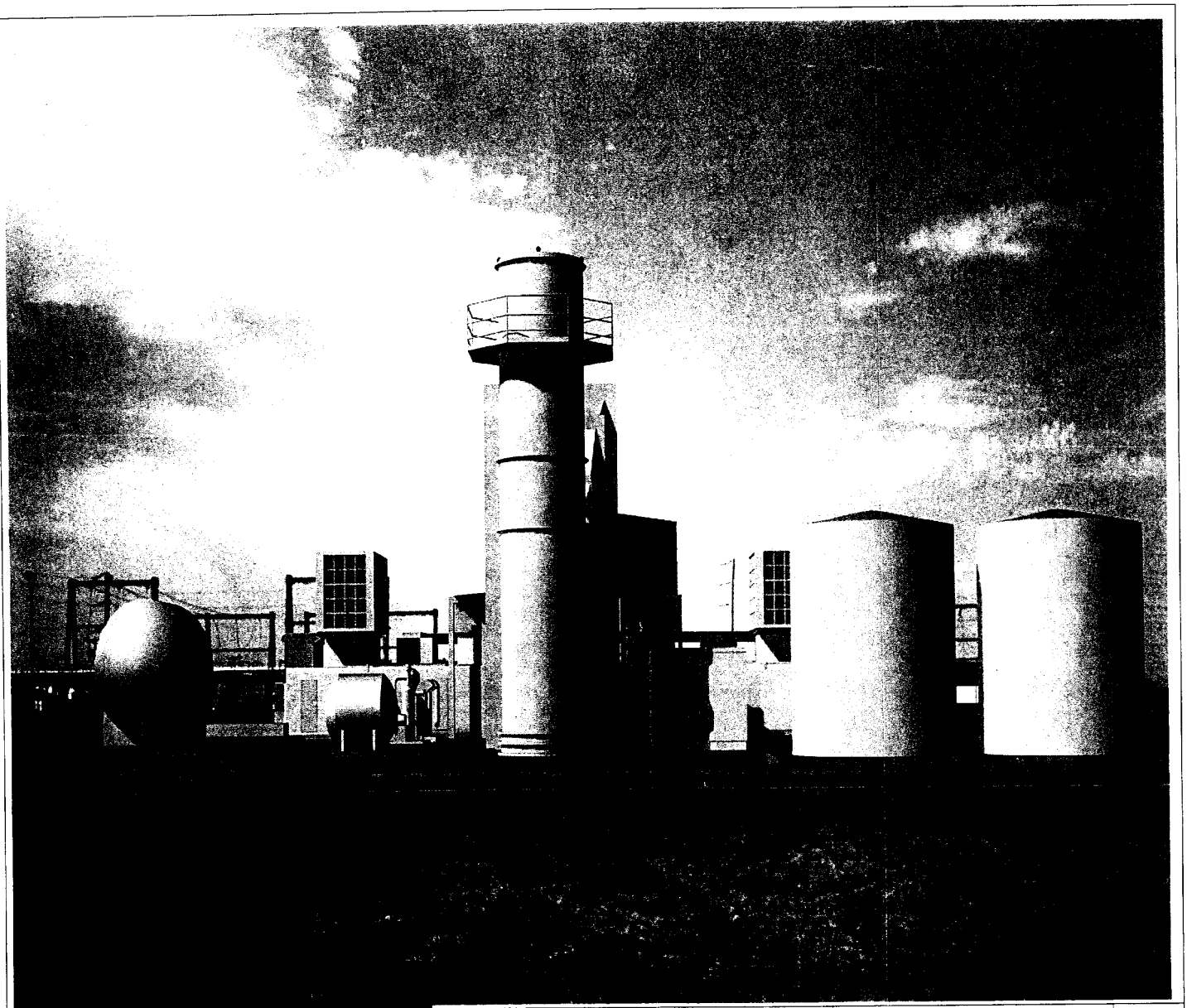

URS	Lodi Electric Energy Facility	Source: Energy Services, Inc.	**Appendix D-1.** VISUAL SIMULATION AS VIEWED FROM THURMAN STREET	October 2002 (Revised Dec. 2002)

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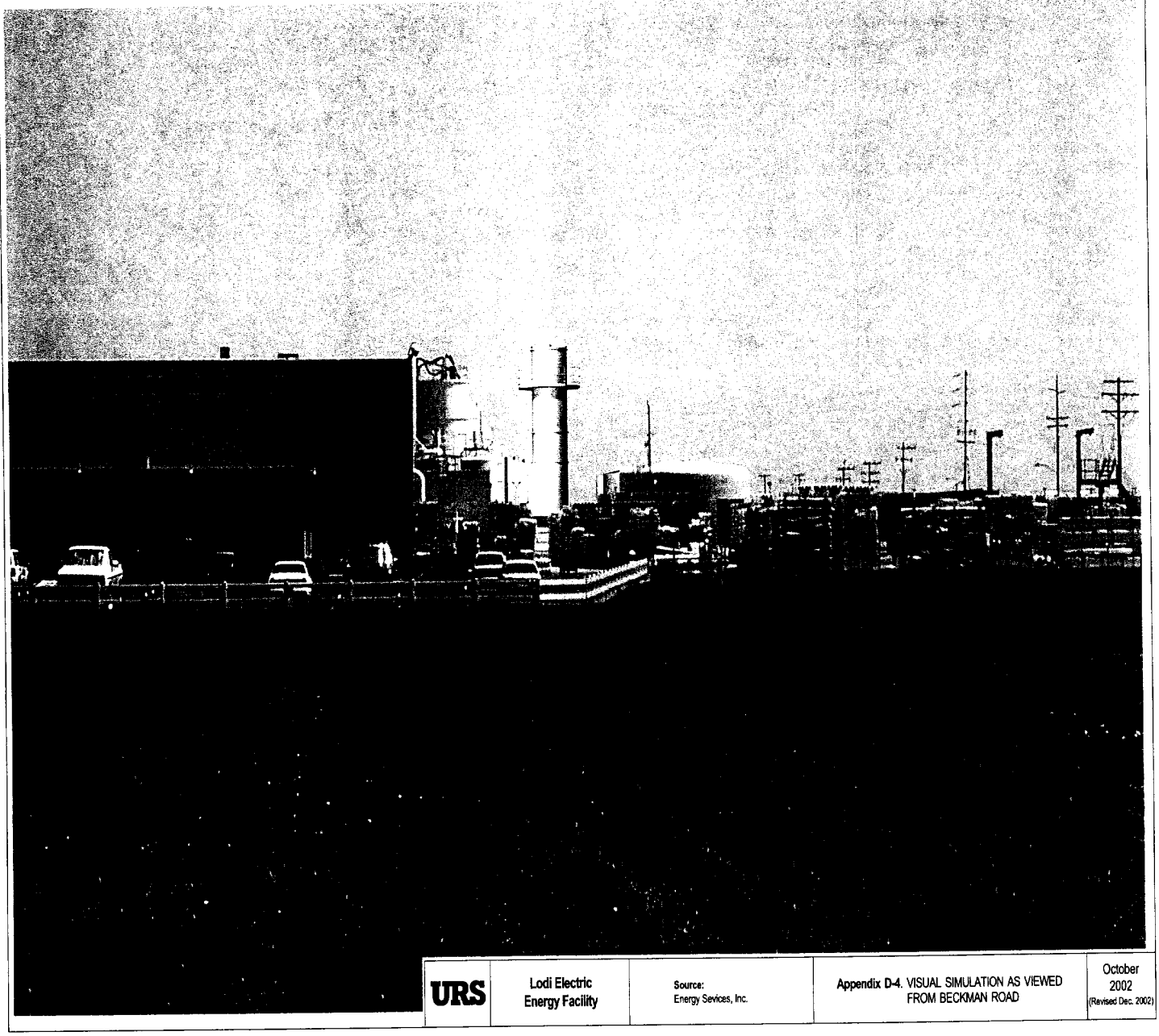

URS	Lodi Electric Energy Facility	Source: Energy Services, Inc.	Appendix D-4. VISUAL SIMULATION AS VIEWED FROM BECKMAN ROAD	October 2002 (Revised Dec. 2002)

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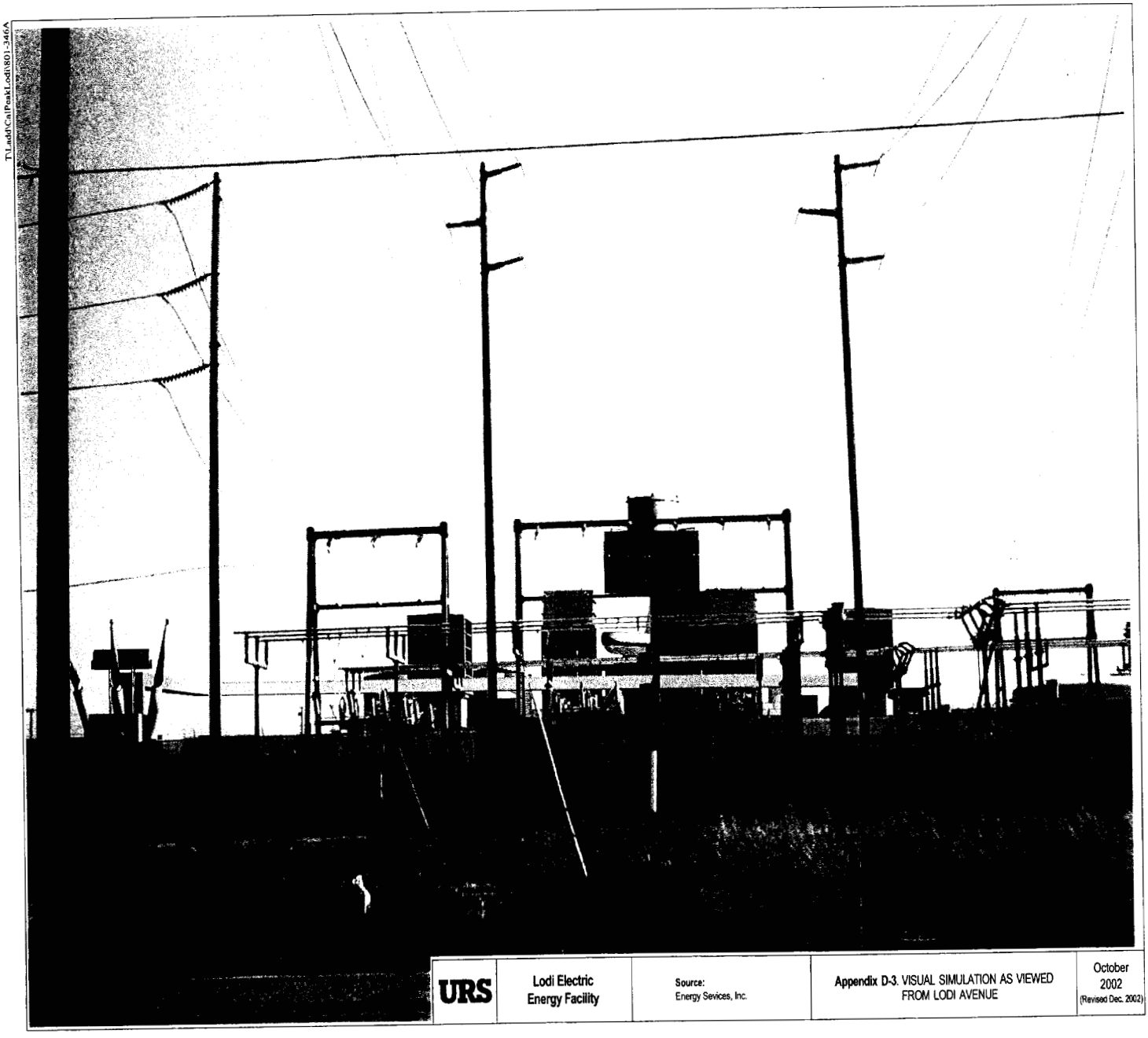

URS	Lodi Electric Energy Facility	Source: Energy Sevices, Inc.	**Appendix D-3.** VISUAL SIMULATION AS VIEWED FROM LODI AVENUE	October 2002 (Revised Dec. 2002)

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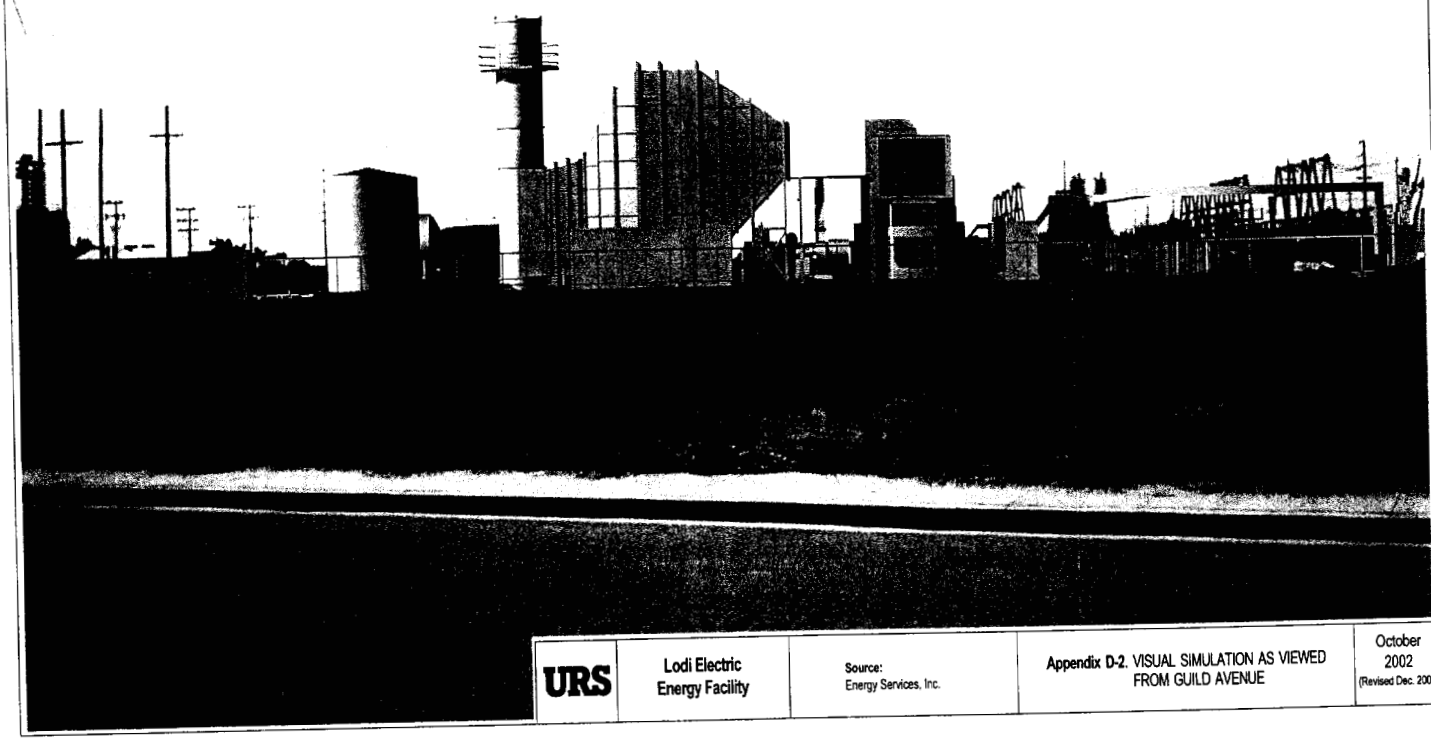


URS	Lodi Electric Energy Facility	Source: Energy Services, Inc.	**Appendix D-2.** VISUAL SIMULATION AS VIEWED FROM GUILD AVENUE	October 2002 (Revised Dec. 2002)

SWIFTPAC™ Transportable Power Plants 25 - 55 MW

Transportable Power

The SWIFTPAC transportable power plants offer 25 - 55 MW of moveable power. The SWIFTPAC 50 power plant is the largest unit of the Pratt & Whitney Power Systems series of 4, 25 and 55 MW.

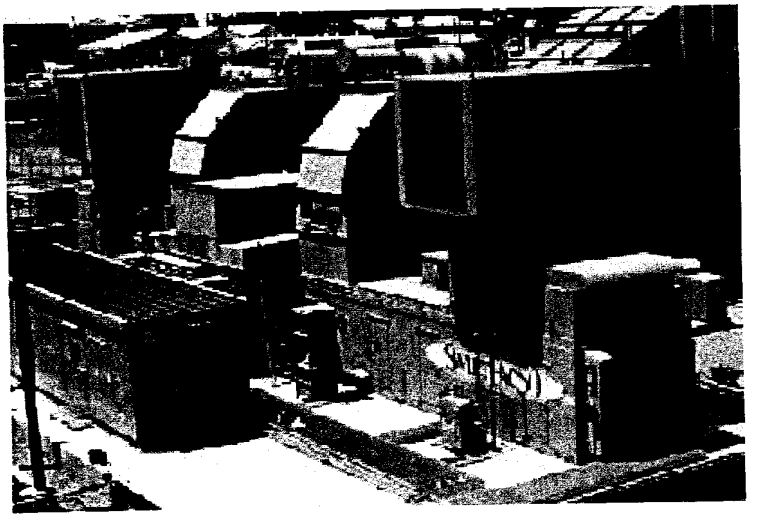
Utilizing the proven PWPS FT8® technology, the SWIFTPAC 25T and 50 transportable power plants are designed to provide quick, reliable power.

The package design includes a shippable engine enclosure which incorporates the gas generator, power turbine, exhaust collector box, inlet plenum and lube system. This factory assembled module allows the SWIFTPAC 25T & 50 transportable power plants to be generating power in less than 3 weeks after arriving on site.

SWIFTPAC products are designed for:

- Rapid Installation
- Lowest On-Site Cost
- Operating Flexibility
- Minimum On-Site Investment
- Ease of Transport
- Easily Relocated After Installation

Pratt & Whitney Power Systems



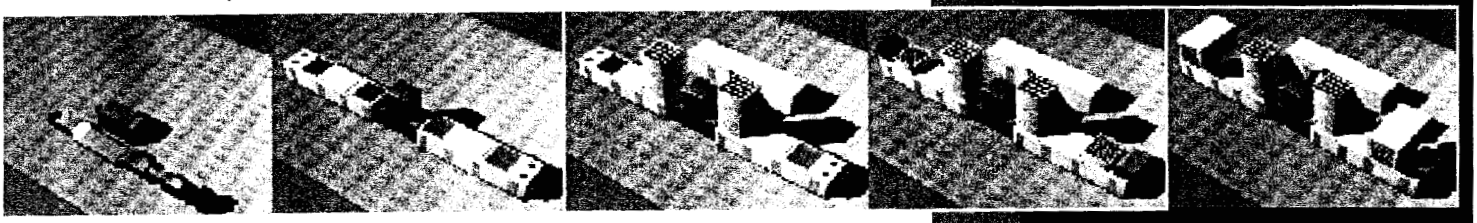
Flexible Power Solutions!

Benefits

- Best in Class Part Load Efficiency
- Reduced Site Setup Time
- Lower Site Cost
- Less Expensive Shipping
- Reduced Field Flushing
- Minimal Field Wiring
- Minimal Field Welding
- Less Site Labor
- Standard & Repeatable Manufacturing Process
- Standard & Repeatable Installation Process
- Assembled & Tested in a Controlled Environment
- Reduced Field Inventory
- Ease of Engine Checkout and Maintenance

25 - 55 MW SWIFTPAC™ Transportable Power Plants

SWIFTPAC 50 Transportable Power Plant Installation



Generator is Placed on "Road Bed" Pad

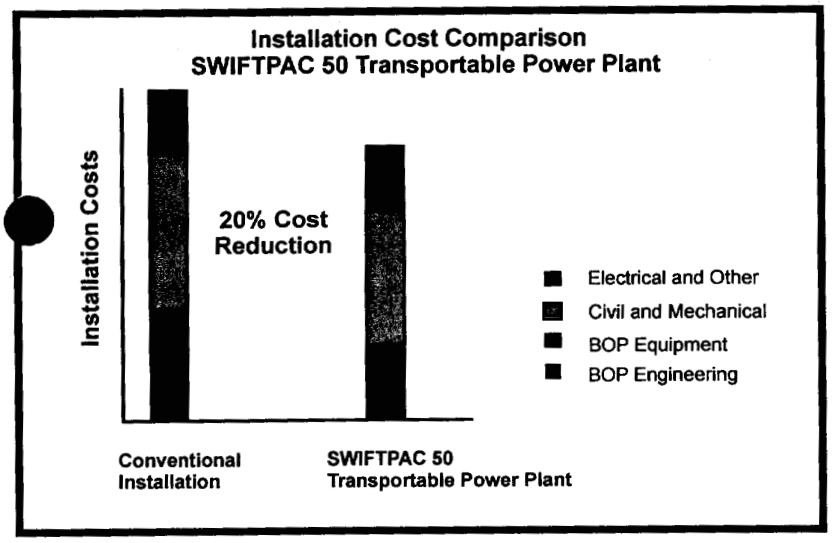
Gas Turbine Enclosure Assemblies Aligned to Generator

Control Enclosure, Generator Silencer, & GT Stacks Set In Place

Inlet Silencer & Air Inlet Duct

Inlet Filter & 13.8 kV Connection Installed

Quick Disconnect Interconnect Cables Installed



Simple Cycle Performance

	SWIFTPAC 25T	SWIFTPAC 50
ISO Output	27 MW	55 MW
US Transport Time	6 Days	6 Days
Number of Trailers	6-8	10-12
Foundation	2-3' Concrete	3' Concrete
Installation	3 Weeks	3 Weeks
Noise	65 dBA @ 400'	65 dBA @ 400'
NOx	25	25
Fuel	Dual	Dual
Frequency	50/60Hz	50/60Hz

Also available with DLN and/or inlet fogging.

Enhancements

Factory Assembled Modules

Integrated Lube Oil System

Factory Tested Quick Disconnect Cables

Pre-made Field Piping

Reduced Field Flushing

Combined GT & Exhaust Enclosure

Factory Checkout

Simple Road Bed Foundation

Compact Layout

Contact:

Pratt & Whitney
Power Systems

1165 Northchase Parkway
Suite 300
Marietta, GA 30067

Phone: 770.859.1999
Fax: 770.859.9099

www.pratt-whitney.com

PORTABLE LNG SYSTEM OVERVIEW

Design Criteria

Trailer Transportable Capacity	9400 Gallons of LNG (~775,000 scf natural gas)
LNG Trailer Design Pressure	150 psig
Vaporizer Trailer Design Pressure	250 psig
Outlet Pressure Range	25-125 psig
Outlet Temperature Range	60-100 °F (normal operation)
Maximum Flowrate	500 Mscfh
Outlet Piping Connection	6" ANSI 300 Flanged Connection

System Components

The portable LNG system consists of the following main components:

LNG Trailer
LNG Storage Tank (11,500 Gallon Gross Volume, 150 psig MAWP)
Auxiliary Pressure Building Vaporizer (Ambient Air Heat Exchanger)

Vaporizer Trailer
Gas Fired Hot Water Boilers (2 - 4,600,000 BTU each)
LNG Vaporizer (Shell and Tube Heat Exchanger)
Primary Pressure Building Vaporizer (Shell and Tube Heat Exchanger)
Water Pump (800 gpm, 15 HP, centrifugal type)
Water System Expansion Tank (250 gallons)
Temperature Control Valves (2) w/ common Actuator (Air Operated) (This is a three-way valve)
Pressure Build System Control Valve w/Actuator (Air Operated, On/Off)
Boiler System Gas Supply Control Valve w/Actuator (Air Operated)
Odorizer (Drip type, 5 gallon storage)
System Control Panel

Auxiliary Trailer
Air Compressor
Electric Generator
Liquid Nitrogen Tanks (2)

System Operation

Liquid LNG is pushed out of the LNG trailer into the vaporizer where it is vaporized into natural gas and then injected into a gas distribution or transmission system via a 6" flexible pipe. The gas is odorized at the point of injection. A check valve prevents backflow into the portable LNG system.

Pressure Building System

The pressure building (PB) system builds pressure in the LNG storage tank to push the LNG out of the tank. The system works by vaporizing a portion of the LNG liquid being pushed out and injecting the vaporized gas back into the storage tank. The primary PB system is a small shell and tube heat exchanger located on the vaporizer trailer. The storage tank pressure is controlled by shutting off the flow of LNG to the PB vaporizer when the pressure is above the desired setpoint. An auxiliary PB ambient air vaporizer is located beneath the LNG storage tank. It is used to supplement the PB capacity of the primary unit and can be used as the sole PB system for low flows.

Boiler System

Dual boilers provide a hot water/glycol mixture to the LNG vaporizer and the primary PB vaporizer. Water is circulated using an 800 gpm centrifugal pump with a 250 gallon tank provided to allow for adequate system volume. Each boiler can be operated at two settings low fire and high fire, with low fire providing half the BTU input as high fire. This allows for four independent control setpoints to assist in temperature control. On startup and for situations where high flows are not required (<200 Mscfh), only one boiler is used to provide better temperature control.

Temperature Control System

The gas temperature setpoint is regulated by controlling the amount of the water/glycol mixture which flows through the boilers. Two automated valves work together to control the ratio of flow routed to the boilers versus the bypass piping. As gas temperature increases above setpoint the majority of the flow goes through the bypass (recirculates through the main heat exchanger), as gas temperature decreases below setpoint the majority of the flow goes through the boilers.

The low and high fire settings for each boiler in tandem with the dual boilers allow for multiple levels of heat input based upon the water/glycol mixture temperature and increases the stability of the gas temperature control system.

Odorizer System

An odorizer drip system is supplied which is manually controlled. The amount of odorant injected is monitored by viewing through a site glass the number of drips injected per unit

of time. The drip rate can be set from 0-100% of scale. The odorant is Captan 50 or equal.

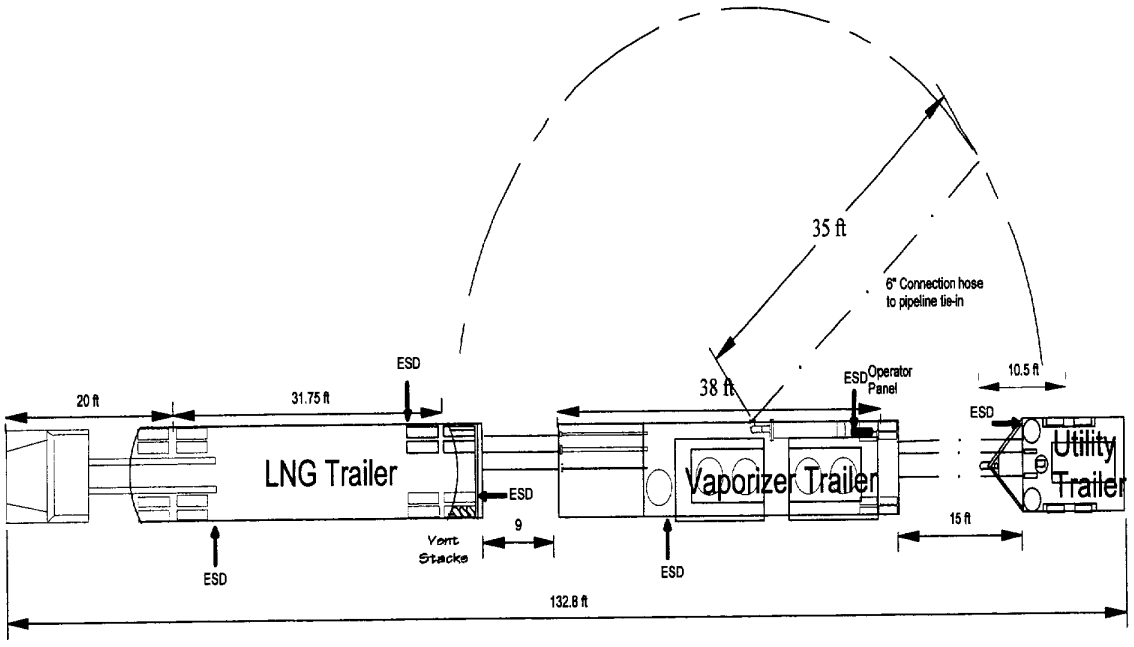
ESD System

The Emergency Shutdown system shut-off the fire control valves at the rear of the LNG trailer which shuts off all LNG flow out of the storage tank. Emergency Shutdown is initiated by various equipment failure and alarm conditions, or by manual activation at one of the ESD stations. The fire control valves are held open by tension on a mechanical cable system.

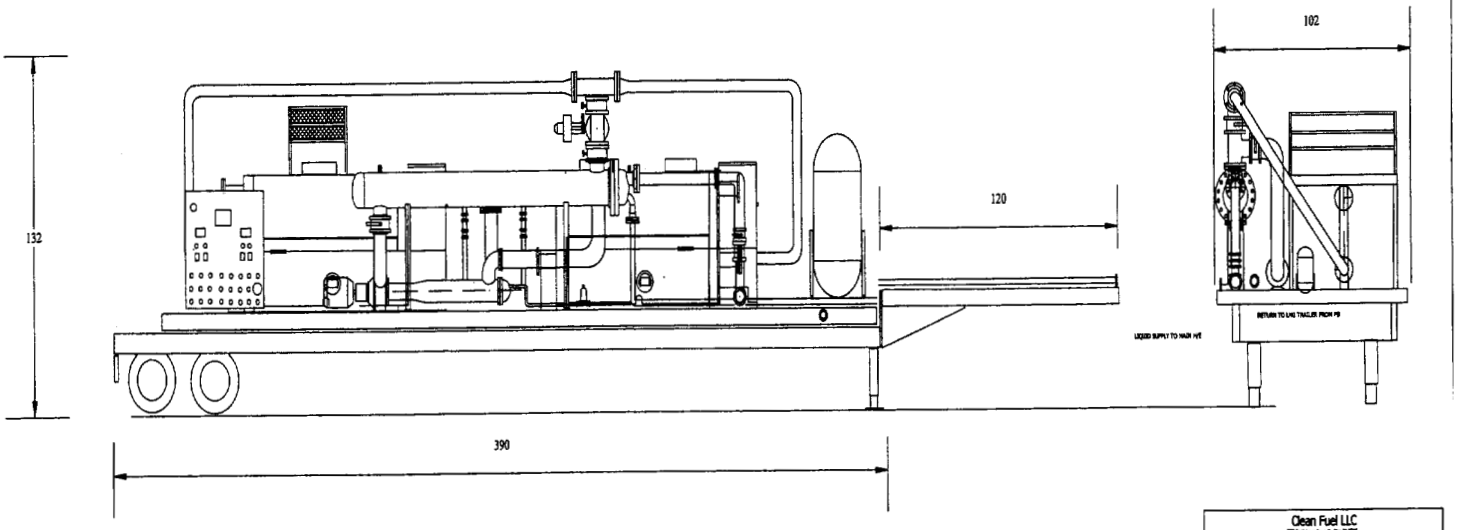
ESD stations consist of pull handles and push buttons. Pull handles are located at the front and back of the LNG trailer and are directly tied to the cable system. Push buttons are located on the vaporizer trailer at the main control panel and on the opposite side near the water tank. A push button is also located on the auxiliary trailer. An air system is utilized to link the push buttons to the cable system. Loss of air pressure releases the cable tension closing the fire control valves.

Automatic Emergency Shutdown occurs when one of the following events occur:

- Failure of an ESD system linking component (e.g. mechanical cable, air hose)
- Fire melting the fusible links in the ESD cable system
- Loss of purge pressure in main control and individual boiler control cabinets
- Low gas temperature



Clean Fuels LLC			
7770 S. LONGE STREET, STOCKTON, CA 95207			
Phone 209-982-9530 Fax 209-982-9529			
DIMENSIONS ARE IN INCHES	APPROVALS	DATE	TITLE
NOTES	DRAWN: JRG	03/00	TransPeak LNG
	MANUFACTURING		System General Arrangement
	SALES/ENG		Lodi Peakshaving Power Plant
	CUSTOMER ORDER No.		DATE / DRAWING NUMBER / REV.
SCALE None			JOB No. / SHEET / OF



Clean Fuel LLC		
NOTES	Transpeak LNG 250 SYSTEM VAPORIZER TRAILER ARRANGEMENT	
	DATE: 01/12/01	DRAWING NUMBER:
	SCALE: NONE	SHEET 1 OF 1

Site Provisions Outline

The requirements for a suitable site for the temporary use of LNG portable equipment for peakshaving applications or for use during gas system maintenance, repair or alteration are to be governed by reference to the most current edition of NFPA 59A and California Code Title 8

NFPA 59A (1996 Edition) reference Chapter 2, section 2-3.4.

General Conditions

1. Suitable off-road parking area capable of supporting the loads:
   a. LNG trailer/tractor - 80,000 lbs over 5 axles; 65 feet long
   b. Vaporizer trailer - 45,000 lbs over two axles and one landing gear; 40 feet long
   c. Utility trailer - 7,000 lbs over two axles and hitch jack;16 feet long;
2. Adequate overall length; (In-line Arrangement)
   a. 16 foot Utility Trailer + 15 foot spacing behind Vaporizer trailer + 40 foot Vaporizer Trailer + 10 foot spacing behind LNG trailer + 65 foot LNG tractor/trailer = Total length required 133 feet.
3. Adequate overall width; (In-line Arrangement)
   a. Minimum of 5 feet on the operational side of the vaporizer trailer
   b. Minimum of 3 feet on the outboard side of the vaporizer trailer
   c. Trailer width is 8 foot 6 inch.
   Total width required is 16 feet 6 inches.

Refer to Arrangement Drawings

Preferred 4. Evacuation route in the event of an emergency which would allow personnel to move in a direction away from the LNG trailer and to an area accessible by emergency response teams.

Area Hazards

Preferred 1. No overhead electrical lines crossing the area for parking of the equipment during operations.

Code 2-3.4 2. No storm drains or other open access areas to underground utilities or other underground areas.

Code 2-3.4 3. The area which may be affected by the run off of LNG (-260 degrees F) resulting from a leak should be free from:
   a. flammable liquid storage in excess of 20 gallons
   b. materials which, if exposed to very cold temperature, would result in injury or property damage -ie steel becoming brittle and failing *(if this is the case, temporary containment may be required)*

Code 2-3.4 4. No vehicular or pedestrian traffic. *(May require use of traffic barriers and/or flag persons to direct traffic)*

Separation Distances

2-3.4 Wherever feasible the following distances shall be maintained:

1. From the edge of the LNG trailer or the vaporizer trailer to buildings and property lines - 25'
2. From the edge of the LNG trailer or the vaporizer trailer to any other storage container - 5 feet
3. Electrical Equipment

   All electrical equipment and connections within 15 feet in any direction from the edge of the LNG trailer and the Vaporizer trailer shall be de-energized and/or removed outside this area during the time of operation or storage of the equipment. *(Equipment that is meets the requirements of Group D, Division 1 may be within the 15 foot area and equipment that is classified Group D, Division 2 may be within the area provided that is beyond 5 feet from any vent or point of probable discharge - generally the rear of the LNG trailer)*

Code 2-3.4 **Security**

1. The site shall be continuously manned whenever LNG is present.
2. Pedestrian and vehicular traffic are restricted during operations of the system.
3. The area must be lighted during night time operating hours.

Cal Code The local fire and other emergency authorities should be notified in advance of any placement of the equipment. They should be familiar with the emergency response plan and the hazardous material plan.

During normal operations a fog is generated from the LNG trailer. This is often a cause for concern of area residents and a likely source of reported leaks. Make the fire authorities aware of this potential problem.

Connection

The system has a connection point located at the center of the vaporizer trailer on the curb side. The system is equipped with three 12 foot sections of 6 inch hose allowing for connections to pipelines within the 36 foot semi-circular radius.

The back flow check valve supplied is a 6 inch 300 # ANSI flange.

Liquified Natural Gas
Typical Analysis

Component	Typical Analysis (mole %)
Methane	>95
Ethane	<2.0
Propane	0.2
Iso-Butane	0.03
Normal-Butane	0.03
Iso-Pentane	0.01
normal-Pentane	0.01
Nitrogen	balance

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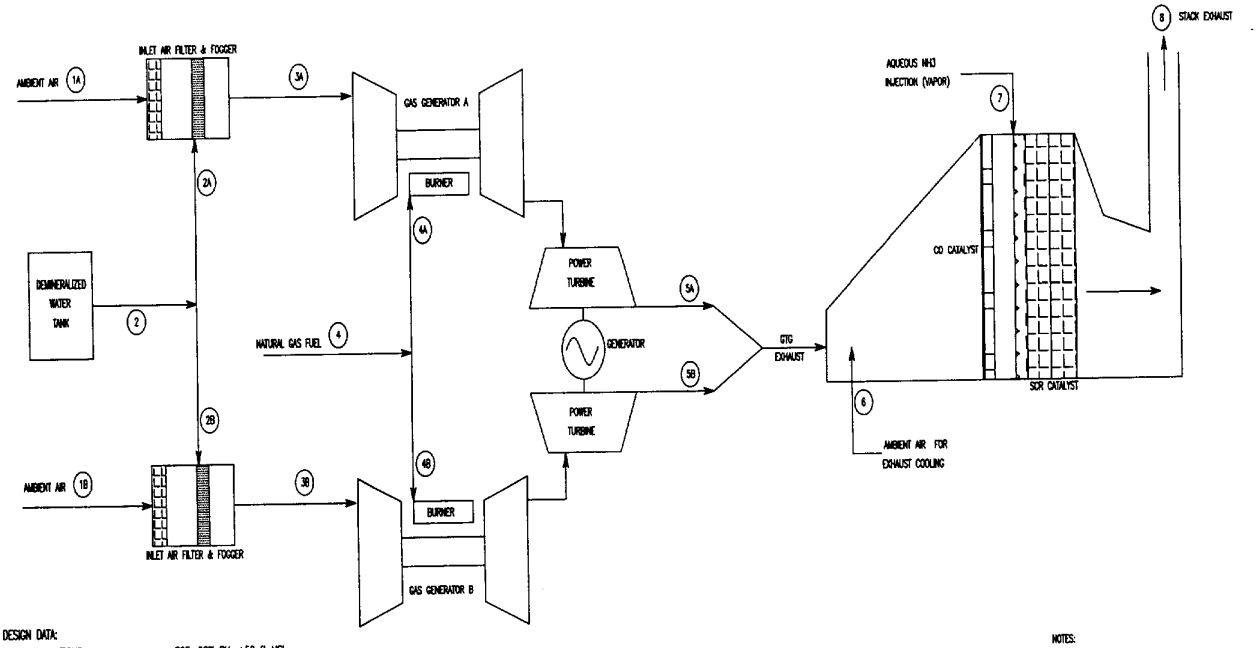


DESIGN DATA:

CONDITIONS: 89F, 28% RH, +50 ft MSL

GROSS POWER: 47,834 kW NET POWER: 46,134 kW

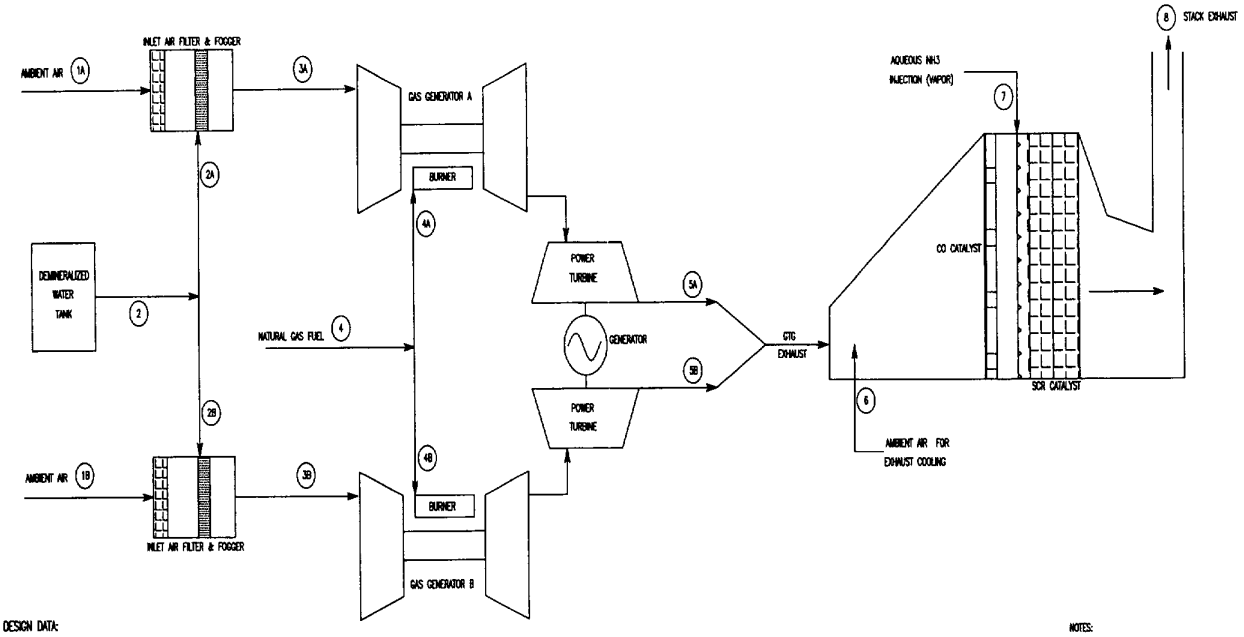
GROSS HEAT RATE: 9291 BTU/kW-hr (LHV=20,560 BTU/LB) NET HEAT RATE: 9633 BTU/kW-hr

PARAMETER	UNITS	1A Intake Air Unit A	1B Intake Air Unit B	2 DM Water Plant	2A Fog Water Unit A	2B Fog Water Unit B	3A Inlet Air Unit A	3B Inlet Air Unit B	4 Gas Fuel Plant	4A Gas Fuel Unit A	4B Gas Fuel Unit B	5A Exhaust Unit A	5B Exhaust Unit B	6 Cooling Air to Exh	7 Aqueous NH3 Flow	8 Stack Exhaust
TEMP DB	DEG F	89	89				66	66				886	886	89		740
TEMP WB	DEG F	66	66				66	66						66		
HUMIDITY RATIO	LBW/LBA	0.0082	0.0082				0.0138	0.0138						0.0082		
PRESSURE	PSIA	14.69	14.69				14.69	14.69						14.69		14.69
AIRFLOW	PPH	632,922	632,922				636,472	636,472						172,206	2,633	
WATER FLOW	PPH			7100	3550	3550									143	
MISCELLANEOUS FLOWS	PPH								21,616	10,806	10,808					
EXHAUST GAS FLOW	PPH											647,280	647,280			1,469,544
EMISSIONS DATA (referenced to 15% O2)																
NOx	PPMVD											39	39			3.0
	PPH											39.4	39.4			6.0
CO	PPMVD											25	25			5.0
	PPH											15	15			6.0
VOC	PPMVD											6	6			2.0
	PPH											2.1	2.1			1.4
FILTERABLE PM10	PPH											3	3			6.0
NH3	PPMVD															10
	PPH															7.4

NOTES:

1. Performance and Emissions Data based on PWPS FT8-2 (DLN) performance deck data as of 9 August 2002.
2. Fogging System performance is based on 100% effective evaporative coolers.
3. CO Catalyst assumed to operate at 80% effectiveness.
4. SCR Catalyst assumed to operate at 88% effectiveness.

URS	Lodi Electric Energy Facility	Source: Energy Services, Inc. LEC-PFD-89F, Dated 8/14/02	Appendix G. PROCESS FLOW DIAGRAM 1	October 2002



DESIGN DATA:

CONDITIONS: 60F, 61% RH, +50 ft MSL

GROSS POWER: 51,007 kW NET POWER: 49,307 kW

GROSS HEAT RATE: 9111 BTU/kW-hr (LHV=20,560 BTU/LB) NET HEAT RATE: 9425 BTU/kW-hr

PARAMETER	UNITS	1A Intake Air Unit A	1B Intake Air Unit B	2 DM Water Plant	2A Fog Water Unit A	2B Fog Water Unit B	3A Inlet Air Unit A	3B Inlet Air Unit B	4 Gas Fuel Plant	4A Gas Fuel Unit A	4B Gas Fuel Unit B	5A Exhaust Unit A	5B Exhaust Unit B	6 Cooling Air to Exh	7 Aqueous NH3 Flow	8 Stack Exhaust
TEMP DB	DEG F	60	60				53	53				869	869	60		730
TEMP WB	DEG F	53	53				53	53						53		
HUMIDITY RATIO	LBW/LBA	0.0068	0.0068				0.0086	0.0086						0.0068		
PRESSURE	PSIA	14.69	14.69				14.69	14.69						14.69		14.69
AIRFLOW	PPH	664,696	664,696				665,858	665,858						172,208	2,633	
WATER FLOW	PPH			2320	1160	1160										
MISCELLANEOUS FLOWS	PPH								22,604	11,302	11,302				143	
EXHAUST GAS FLOW	PPH											677,160	677,160			1,529,304
EMISSIONS DATA (referenced to 15% O2)																
NOx	PPMVD											39	39			3.0
	PPH											41	41			6.3
CO	PPMVD											25	25			5.0
	PPH											16	16			6.4
VOC	PPMVD											6	6			2.0
	PPH											2.2	2.2			1.5
FILTERABLE PM10	PPH											3	3			6.0
NH3	PPMVD															10
	PPH															7.7

NOTES:

1. Performance and Emissions Data based on PWPS FTB-2 (DLN) performance deck data as of 9 August 2002.
2. Fogging System performance is based on 100% effective evaporative coolers.
3. CO Catalyst assumed to operate at 80% effectiveness.
4. SCR Catalyst assumed to operate at 80% effectiveness.

URS	Lodi Electric Energy Facility	Source: Energy Services, Inc. LEC-PFD-60F, Dated 8/14/02	Appendix G. PROCESS FLOW DIAGRAM 2	October 2002

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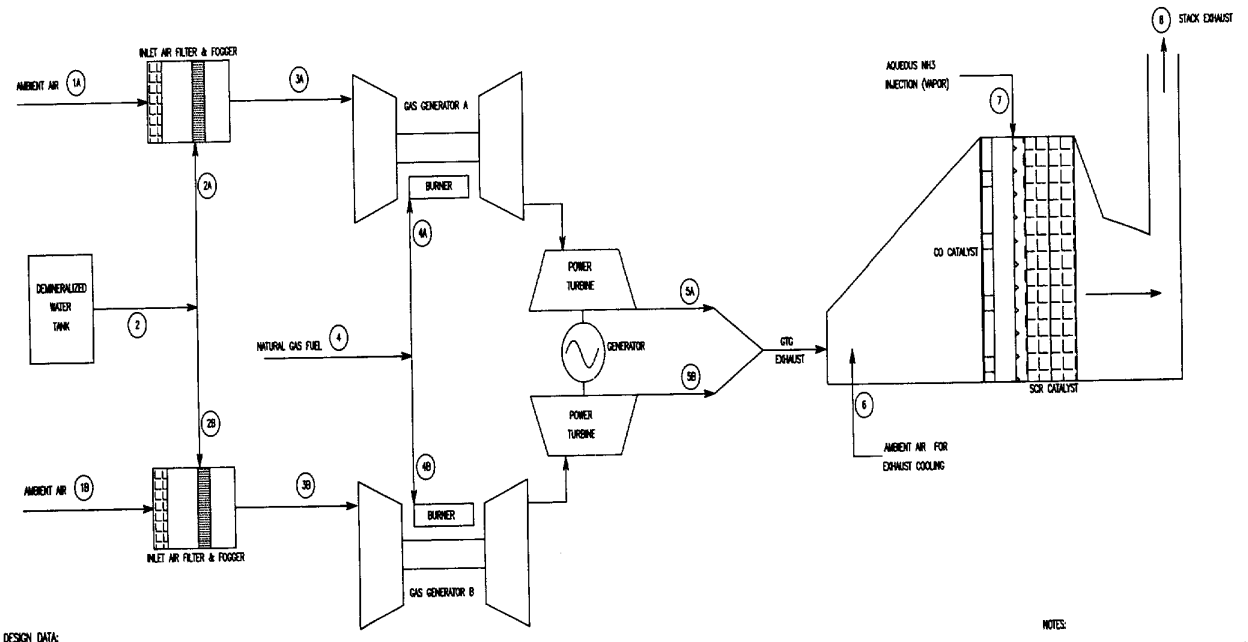

DESIGN DATA:

CONDITIONS: 48F, 77% RH, +50 ft MSL

GROSS POWER: 52,196 kW NET POWER: 50,496 kW

GROSS HEAT RATE: 9049 BTU/kW-hr (LHV=20,560 BTU/LB) NET HEAT RATE: 9354 BTU/kW-hr

PARAMETER	UNITS	1A Intake Air Unit A	1B Intake Air Unit B	2 DM Water Plant	2A Fog Water Unit A	2B Fog Water Unit B	3A Inlet Air Unit A	3B Inlet Air Unit B	4 Gas Fuel Plant	4A Gas Fuel Unit A	4B Gas Fuel Unit B	5A Exhaust Unit A	5B Exhaust Unit B	6 Cooling Air to Exh	7 Aqueous NH3 Flow	8 Stack Exhaust
TEMP DB	DEG F	48	48				48	48				863	863	48		725
TEMP WB	DEG F	45	45				45	45						45		
HUMIDITY RATIO	LB/WLB/A	0.0055	0.0055				0.0055	0.0055						0.0055		
PRESSURE	PSIA	14.69	14.69				14.69	14.69						14.69		14.69
AIRFLOW	PPH	677,193	677,193				677,193	677,193						172,208	2,633	
WATER FLOW	PPH			0	0	0										
MISCELLANEOUS FLOWS	PPH								22,974	11,487	11,487				143	
EXHAUST GAS FLOW	PPH											688,680	688,680			1,552,344
EMISSIONS DATA (referenced to 15% O2)																
NOx	PPMVD											39	39			3.0
	PPH											42	42			6.4
CO	PPMVD											25	25			5.0
	PPH											16	16			6.5
VOC	PPMVD											6	6			2.0
	PPH											2.2	2.2			1.5
FILTERABLE PM10	PPH											3	3			6.0
NH3	PPMVD															10
	PPH															7.8

NOTES:

1. Performance and Emissions Data based on PWPS FTI-2 (DLN) performance deck data as of 9 August 2002.
2. Fogging System performance is based on 100% effective evaporative coolers.
3. CO Catalyst assumed to operate at 80% effectiveness.
4. SCR Catalyst assumed to operate at 88% effectiveness.

URS	Lodi Electric Energy Facility	Source: Energy Services, Inc. LEC-PFD-48F, Dated 8/14/02	Appendix G. PROCESS FLOW DIAGRAM 3	October 2002

PRELIMINARY
FRAC-OUT CONTINGENCY PLAN

For Directional Drilling of the Mokelumne River Associated with the Lodi Electric Energy Facility

Prepared for:

CalPeak Power – Midway, LLC
7365 Mission Gorge Road, Suite C
San Diego, CA 92120

Prepared by:

URS

130 Robin Hill Road, Suite 100
Santa Barbara, California 93117
(805) 964-6010 ◆ Fax: (805) 964-0259

October 2002

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SECTION 1.0 INTRODUCTION

Frac-out, or inadvertent return of drilling lubricant, is a potential concern when Horizontal Directional Drilling (HDD) is used for constructing pipelines under sensitive habitats and waterways. The HDD procedure is designed to be a closed loop system that uses a slurry material (mud) for advancing the drill string. The mud serves several functions:

- It contributes to keeping the drill bit cooled by reducing friction.
- It provides a means to remove the formation cuttings by entraining the cutting in the returning mud.
- It provides support to the drill shaft by creating a smear zone capable of reducing formation slough.
- It is statically pressure balanced to keep the hole open and not allow formation fluids to enter the bore and in the drill hole.

Bentonite slurry, a fine clay material, is the material that will be used on this project. The non-toxic bentonite is a California Environmental Protection Agency approved drilling mud material and commonly used in farming practices as an amendment to stabilize soils.

The HDD construction method is much less intrusive than the traditional open-cut trench method where the habitats sustain direct soil disturbance. The primary areas of concern for inadvertent returns occur at the entrance and exit points where the drilling equipment are at depths of less than approximately 12 to 20 feet deep. The likelihood of inadvertent return decreases as the depth of the pipe increases. Inadvertent returns along the pipeline alignment are most likely to occur within a linear area of approximately 150 feet at either end of the HDD segment. The entry and exit points for the HDD are approximately 250 feet or greater from the outboard tow of the levee or the bank of the crossing.

The directionally drilled river crossing procedures include a very accurate monitoring and control system to track the progress and exact location of the drilling head at all times. Fine horizontal and vertical adjustments are made throughout the procedures to assure that the drilling profile matches the planned profile. As stated previously, drilling mud is used during the advancement of the drill string to erode the formation and aid in stabilizing the pilot hole. The specific weight of the drilling mud is adjusted throughout the procedures to ensure hydrological stability. However, in the event of spill or that any seepage of bentonite slurry is noticed in the project area, operations will implement the procedures outlined in the containment and control section of this plan.

Benthic invertebrates, aquatic plants, and fish and their eggs can be smothered by the fine particles in the bentonite if they are discharged to low energy waterways (i.e. wetlands, or tidal mudflats) that support these aquatic species (Anderson et al. 1996). However, the crossings that will be traversed using the HDD technique are not low energy waterways and exhibit moderate to high flows, which in effect will reduce the amount of smother and reduce the amount of suspended sediment. Bentonite is a naturally occurring substance that will physically and biologically degrade without human intervention.

Changes in fish behavior are some of the first effects observed from increasing suspended sediment concentrations. Such changes are generally transient, benign and reversible (Newcombe 1994). Avoidance of sediment plumes by fish is typically one of the first reactions observed (Bisson and Bilby 1982, McLeay et al. 1987). Lawrence and Scherer (1974) observed 66 ppm (mg/L) suspensions of bentonite clay to cause avoidance behavior in rainbow trout. In salmonids, threshold concentrations required to cause given effects generally decrease with increasing particle size (Servizi and Martens 1987, 1991). Therefore, equivalent concentrations of suspended bentonite clay will have lower physiological effects than suspensions of larger sediment particles. Avoidance of sediment plumes by juvenile and adult fish may also prevent or reduce potential effects. According to Bohlen and Stroble (1992) during freshwater laboratory trials, deposited drilling muds remained intact with only surficial fragments being displaced until boundary stress values exceed 0.0084 lb/ft^2 (4.0 $dynes/cm^2$). Beyond this critical level of boundary shear stress, deposits progressively eroded on a particle by particle basis at a rate of 0.14 $lb/ft^2/hr$ (0.07 $dynes/cm^2/hr$). Resuspension of previously eroded drilling mud material deposited downstream required only half the initial erosion shear stress.

There are a number of natural factors that will reduce the risk of frac-out occurrences. First, a pressure-induced crack would tend to close when the jetting pressure is stopped, thus limiting the size of the flow paths. Also, the drilling mud would be somewhat resistant to flow, and considerable excess water pressure over the mud pressure would be required to cause rapid mud displacement. If weighted drilling mud is used, the density of the mud counterbalances the maximum excess water pressure. In addition to these natural factors, the following construction safeguards are recommended to mitigate the risk of hydraulic fracturing beneath the Mokelumne River.

3.1 DESCRIPTION OF THE EQUIPMENT AND PROCEDURES FOR CONTROLLING FLUID PRESSURES TO REDUCE THE RISK OF HYDRAULIC FRACTURING

At all times during drilling of the pilot holes, the drilling contractors will limit and control the drilling fluid pressures to those necessary to penetrate the ground and avoid or minimize hydraulic fracturing. If significant hydraulic fracturing of the ground or significant mud loss occurs, the drilling process will cease immediately or as soon as operations can be safely stopped until the cause has been determined and decisions will be made regarding the need for the application of appropriate mitigation measures, if warranted.

All drilling equipment will have pressure gauges to monitor the amount of fluid pressure being generated downhole at the jet bit. Further, the drilling contractor will use larger diameter jets in the bit to decrease the amount of pressure drop while still providing enough cutting action of the formation so that the jet bit can be advanced without excessive formational resistance.

The drilling contractor will monitor the drilling mud weights going in and returning out of the hole. A minimum mud weight of 80 pcf or 10.7 lbs./gal will be maintained to counterbalance external pressures. The drilling contractor will also monitor the mud at every 30-foot section of pipe drilled, by taking mud weight sample from the front of the surface sump pit.

3.2 DESCRIPTION OF THE EQUIPMENT AND PROCEDURES TO RESPOND TO HYDRAULIC FRACTURES THAT BREAK OUT AT THE GROUND SURFACE

Hydraulic fractures could be encountered. The equipment and procedure to respond to hydraulic fractures are described below.

3.2.1 A Hydraulic Fracture with Drilling Mud Flowing From It that Stops Once the Bore Advances Beyond It

The drilling contractor would initially respond by sand bagging around the fracture orifice, placing a centrifugal pump on the outside of the containment sand bags and pumping the mud seeping from the fracture back to the mud tanks.

The drilling contractor will have onsite two pumps for this purpose and enough sandbags to make four containment pits approximately 10 ft. wide by 20 ft. long by 2 ft. deep.

In addition to containing the drilling fluids as stated in this specific case, the drilling contractors would continue drilling and advancing the pilot hole and pre-reaming operations and visually monitoring the seepage area.

3.3 METHOD FOR IDENTIFYING WHETHER FRAC-OUT IS OCCURRING WITHIN OPEN WATERS

The open water crossing will have an on-site environmental monitor once the drill head advances beyond the outboard toe of the riverbank. A manned vessel will use water depth sensing equipment to approximate the depth and contour of the crossing. The monitor will use a depth discrete sampler that allows for water samples to be taken within 2 to 12 inches of the bottom contours of the crossing. Prior to the advancement of the drill bit beyond the bank, a water sample will be taken near the bottom of the crossing to be used as a background turbidity indicator. This sample will be transferred to a graduated column that has been fitted with a Secchi disk. The use of a Secchi disk is a proven, readily available method for determining relative turbidity or clarity of water. This reference level will be used to compare others samples that will be taken three times per day while the drill bit is passing under the waterway. If the sample taken to evaluate whether frac-out is occurring returns a distinctly lower figure (i.e., more turbid) than the background sample then the following procedure will be followed. First, another sample will be taken upstream of the location to assess whether the increase in turbidity is due to natural or other man-made factors such as discharges by farming activities. If the upstream sample is similar to the sample taken along the crossing route then the turbidity increase will likely be attributed to natural or other man-made factors not related to the drilling operation.

Second, if the upstream sample is similar to the background sample then it will concluded that a localized turbidity episode is occurring. This episode may again be caused by natural or other man-made factors or from the drilling operation. In order to evaluate whether the episode is related to the drilling operation, a sediment sample will be acquired using a grab sampler. Upon retrieval of the sample the sediment matrix will be evaluated by the biological

monitor in the field. If the sediment shows inclusions of bentonite muds that are attributable to the drilling operation further samples will be taken to evaluate the areal dimensions of the release. Calculations of the volume of the release will be based upon the areal dimension and depth of deposition of bentonite mud.

Once an inadvertent release of drilling mud is identified, drilling, including the recycling of mud, will be stopped immediately. The pressure of the water above the pipe would then keep excess mud from escaping. The drilling operator will then proceed to "pull-back" a rod or two of drill string and, if practical, apply a down-hole sealant to aid in plugging the fracture. This will allow the drill bit to continue at a slower pace with lower drill bit pressure past the weak point. The amount of drilling mud that could be lost to the environment in the event of an inadvertent release depends on the size of the fracture and amount of head pressure.

In the event of a complete loss of return of drilling mud to the entrance pit for a time period greater than three hours, it will be assumed that an inadvertent release has occurred and the procedures for containment described above will be implemented.

3.4 DESCRIPTION OF EQUIPMENT, PROCEDURES, AND MATERIALS FOR ABANDONING AN INCOMPLETE PILOT HOLE THAT CANNOT BE ADVANCED FURTHER

In the event the drilling operation requires abandonment, the following procedures will be implemented.

- The drill pipe would be removed from the borehole.
- The entry pit would be pumped free of any fluids and backfilled with surrounding soils, tamped with a backhoe, and graded.

The drilling mud would be left in the pilot hole where it would form a benign clay plug.

3.5 DESCRIPTION OF EQUIPMENT, PROCEDURES, AND MATERIALS NEEDED TO LEAVE IN PLACE ANY PIPE THAT CANNOT BE PULLED, AND FOR ABANDONING THE REAMED-OUT BORE AND LEFT-IN-PLACE PIPE SECTION

If the product pipe becomes stuck and further attempts to remove the pipe from the hole fail, the drilling contractor would cut the pipe at ground surface, pump the entry pit free of any fluids, backfill with surrounding soils, tamp with a backhoe, and grade the site. The drilling

mud would be left in the pilot hole where it would form a benign clay plug and the stuck pipe would be physically hardened in place.

3.6 RESPONSE PROCEDURES FOR FRAC-OUT

1. Should seepage occur on the ground in the project area, on-site materials consisting of industrial grade PVC mesh with steel T-posts and natural straw bales will be installed around the seepage area to contain the fluid.

2. Should seepage occur beneath the waterway in a shallow and accessible area[1], on-site materials consisting of industrial grade PVC mesh with steel T-posts and natural straw bales will be installed above and below the crossing site where the depth of the waterway allows. If the seepage is less than 3 feet of depth, a 50-gallon plastic drum with the bottom cut out will be placed over it for isolation and containment.

3. After the assessment procedure that chooses a cleanup alternative, bentonite seepage that has occurred will be removed using a vacuum truck and then transported to an approved disposal site.

4. Should the on-site environmental monitor detect either visually or from sampling during times of suspected loss of material that a frac-out has occurred within the open water portion of the crossing, the following procedures should be enacted:

   - Notify the drilling superintendent of the incident via cell phone or radio.

   - Coordination of activities between the environmental monitor and the drilling superintendent will commence to further evaluate the significance of the material loss and the safety of the drilling operation.

   - Notify relevant project personnel and the agency contacts.

   - If an environmentally significant release is identified, drilling operations will be suspended as soon as practicable.

   - The cleanup scenarios will be evaluated, prepared and implemented.

[1] The environmental monitor will assess whether the cleanup effort would be more damaging to the area than natural degradation. The least damaging alternative will be chosen.

3.7 EVALUATION PLAN

After the above actions have been taken, the project management team and the contract drilling engineer will evaluate the feasibility of continuing the boring procedure or implementing the Abandonment Contingency Plan (ACP) after evaluating the following:

- The location of the drilling head assembly will be verified with portable locating equipment. If it is determined that the drilling profile does not match the planned profile, and exceeds design limits, the ACP will be implemented.

- If the location and profile are within design limits, the specific weight of the drilling mud will be verified to ensure a slightly overbalanced condition to the surrounding formation. The specific weight will be adjusted if necessary.

- If location, profile, and drilling mud weight are determined to be within design limits, and seepage of Bentonite slurry is controlled, the contract drilling engineer may proceed.

- Should it be determined that the stability of the bored crossing is in serious question, even if location, profile, and drilling mud weight are deemed satisfactory, the ACP will be implemented.

3.8 ABANDONMENT CONTINGENCY PLAN FOR DIRECTIONAL DRILLING OF RIVER CROSSINGS

The following general plan would be executed if suspension of the drilling operations were enacted and/or the partially completed drilled hole abandoned.

3.8.1 During Pilot Hole Drilling

If drilling were to be suspended during the pilot hole drilling, the following general procedure would be executed.

- Advancement of the drill string would be halted.

- The drill pipe would be removed from the borehole.

- The entry pit would be pumped free of any fluids and backfilled with surrounding soils, tamped with a backhoe, and graded.

The drilling mud would be left in the pilot hole where it would form a benign clay plug.

3.8.2 During Reaming

If drilling were to be suspended during the reaming of the hole, the following general procedure would be executed.

- Pullback of the remaining string would be halted.
- If possible, the reamer would be pushed back to the exit end.
- The entry pit would be pumped free of any fluids and backfilled with surrounding soils, tamped with a backhoe, and graded.

The drilling mud would be left in the pilot hole where it would form a benign clay plug.

3.8.3 Notification Procedures

The following agencies will be notified as soon as practicable in the event this contingency plan is implemented and a frac-out impacts water resources:

Note: The following list is preliminary and will be completed prior to initiating drilling work.

National Marine Fisheries Service

Ms. Madelyn Martinez
(916) 930-3605

US Fish and Wildlife Service

Mr. Brian Peterson
(916) 414-6600

California State Lands Commission

Mr. Kirk Walker
(916) 574-1822

California Department of Fish and Game

Mr. Dan Gifford
(916) 358-2877 or
(209) 369-8851 res.

Reclamation District:

[To be completed prior to construction.]

Property Owners:

Murdaca Family, LP: (209) 369-3712
CWR Industries, Inc: (209) 369-3712
Harold and M. Koenig: (209) 368-5216
Stephen M. and Kathlyn F. Kappos: (209) 369-6795

Police Department:

[To be completed prior to construction.]

Fire Departments:

Woodbridge Fire District
400 East Augusta
Woodbridge CA 95258
(209) 369-1945

Medical Facility:

Lodi Memorial Hospital
975 South Fremont
Lodi, CA
(209) 334-3411

3.8.4 List of Sources for Quick-Setting Grout, Rock Riprap, Sand, and Gravel that can be Accessed on an Emergency Basis

- Rock riprap (6 inch to 18 foot size):

  Cal West Rock
  1800 North State Highway 104
  Ione, CA
  Office Phone: (209) 274-2436

- Grout, sand and gravel:

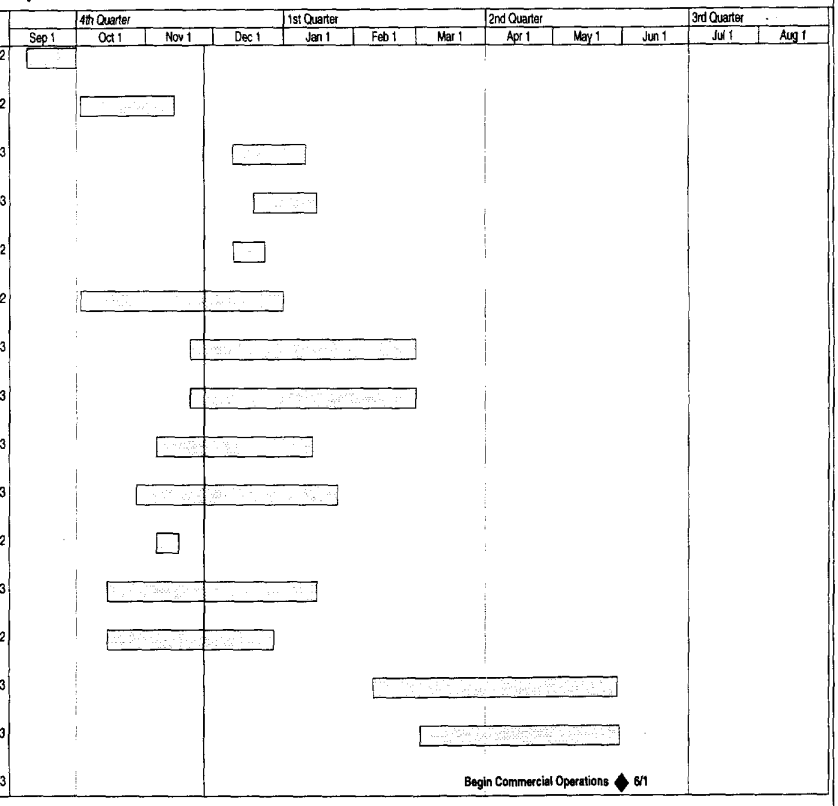
  Asta
  39 North Front Street
  Airport & St. Francis Streets (physical location of material)
  Rio Vista, CA 94571
  (707) 374-6472

  Galt Rock
  North Lincoln Way & Live Oak Avenue
  Galt, CA
  (209) 745-1925

Each truckload will contain approximately 25 tons of material. The response time is approximately one to one and one-half hours.

Lodi Electric Energy Center
Project Schedule and Milestones

ID	Task Name	Duration	Start	Finish
1	Site Planning and Development	16 days	Mon 9/9/02	Mon 9/30/02
2				
3	City of Lodi Land Use Plan Review and Approval	30 days	Thu 10/3/02	Wed 11/13/02
4				
5	City of Lodi Construction Detail Plan Review / Building Permit	24 days	Tue 12/10/02	Fri 1/10/03
6				
7	City of Lodi Wastewater Discharge Permit	20 days	Thu 12/19/02	Wed 1/15/03
8				
9	City Encroachment Permit - Lodi Public Works Dept.	10 days	Tue 12/10/02	Mon 12/23/02
10				
11	San Joaquin Valley Unified APCD Review and ATC Approval	64 days	Thu 10/3/02	Tue 12/31/02
12				
13	San Joaquin County PW Franchise Agreement for roads	72 days	Thu 11/21/02	Fri 2/28/03
14				
15	San Joaquin County County Encroachment Permit	72 days	Thu 11/21/02	Fri 2/28/03
16				
17	San Joaquin County County Site Review and Approval	49 days	Wed 11/6/02	Mon 1/13/03
18				
19	State Lands lease for river crossing	65 days	Mon 10/28/02	Fri 1/24/03
20				
21	State Reclamation Board Encroachment Permit	8 days	Wed 11/6/02	Fri 11/15/02
22				
23	U. S. Army Corps Section 404 NWP 12	67 days	Tue 10/15/02	Wed 1/15/03
24				
25	CCT / UPRR encroachment	54 days	Tue 10/15/02	Fri 12/27/02
26				
27	Engineering, Procurement and Construction	79 days	Mon 2/10/03	Thu 5/29/03
28				
29	Gas Pipeline construction	65 days	Mon 3/3/03	Fri 5/30/03
30				
31	Begin Commercial Operations	0 days	Sun 6/1/03	Sun 6/1/03



CRITERIA POLLUTANT EMISSIONS AND AIR QUALITY IMPACTS

The quantity of combustion air contaminants from the turbine is based on data provided by the manufacturer. Manufacturers' data has been adjusted to account for emissions controls. Emissions will be controlled to a rate of 3 ppmv dry for NO_x, and 2 ppm for VOCs (ROC). The CO catalyst is designed to reduce CO to 5 ppmv dry at 15 percent O_2.

The emissions for the air quality analysis of annual impacts are based on one start-up/shut down each day and operation for 16 hours a day, 6 days per week (56% annual capacity). This scenario is the most likely mode of operation, and is conservative in that other modes of operation will likely involve fewer start-up and shut down cycles. All emission rates and impact assessments for averaging periods of 24 hours or less assume continuous operations as a worst case. The annual emission estimates are shown in Table J-1. A detailed emission summary for the FT8-2 SwiftPac SP50 simple cycle combustion turbine unit is provided in Table J-2, which covers ambient operating temperatures of 100° F, 89° F, 60° F, and 48° F. The following discussion on emissions and impacts is based on a 60° F ambient operating environment as representative of the predominant site conditions.

TABLE J-1
AIR POLLUTANT EMISSION ESTIMATE FOR
LODI ELECTRIC ENERGY FACILITY (60° F)

	NO_x	VOC	PM_{10}	CO	SO_x	NH_3
Annual Capacity Factor[1]						
Ton/yr	10	7	14.6	20	3	19
lb/day[2]	151	36	144	154	29	188
Start-Up/Stop Emissions[3]						
lb	1.3	11.9	2.2	15.1	0.3	1.5
Hourly Emissions, 100% load						
lbs/hr	6.3	1.5	6.0	6.4	1.2	7.7

1 Based on turbine operation of 4866 hours per year at 60° F, with 608 turbine starts/stops.

2 Lbs/day assumes 24 hours of continuous operation at 60° F.

3 Start-up lasts 11.5 minutes

Ambient Air Quality Impact Analysis Input

The EPA-approved Industrial Source Complex dispersion model (ISCST3) was used to calculate concentrations of emissions from the proposed project. ISCST3 is a Gaussian plume model and implements methodologies described in the "Screening Procedures for Estimating the Air Quality Impacts from Stationary Sources" (EPA, 1992). The model in the screening mode uses source specific emissions data along with worst case meteorological

TABLE J-2

Lodi Electric Energy Center
FT8-2 (DLN) SWIFTPAC UNIT

Emissions Summary

Location	Lodi, CA
Site Elevation	50 ft
Ambient Pressure	14.7 psia
Stack Height	50 ft

Gas Fuel Analysis (1)

Component	Mole %
Methane	94.36
Ethane	3.251
Propane	0.255
Iso-Butane	0.037
N-Butane	0.046
Iso-Pentane	0.013
N-Pentane	0.01
C6+	0.059
N2	1.515
CO2	0.513

Notes:

1 Typical Gas Analysis - San Francisco Bay Area
2 Performance and emissions data based on PWPS FT8-2 DLN performance data as of 9 August 2002.
3 Fuel flow rate based on performance deck LHV = 20560 btu/lb.
4 Stack exhaust flow based on combined GT exhaust flow plus exhuast duct cooling air, ammonia flow and dilution air flow rates.
5 Stack velocity based on 12 ft diameter stack.

Emissions Summary	Case	1	2	3	4
Gas Turbine Data (2)		Full Load Operation			
Ambient Temperature	deg F	100	89	60	48
Relative Humidity	%	20	28	61	77
Fogging System	On/Off	On	On	On	Off
Fuel Flow (3)	lb/hr	21330	21616	22604	22974
	MMBTU/hr (LHV)	439	444	465	472
Turbine Exhaust Flow per GT	lb/hr	638280	647280	677160	688680
Turbine Exhaust Temperature	deg F	892	886	869	863
Stack Exhaust Flow (4)	lb/hr	1451544	1469544	1529304	1552344
Stack Exhaust Temperature	deg F	760	740	730	725
Stack Flow at Temperature	acfm	756013	765388	796513	808513
Stack Exit Velocity (5)	ft/min	6685	6768	7043	7149
Emissions at Turbine Exit per GT (15% O2)					
NOx	ppmvd	39.0	39.0	39.0	39.0
	PPH	38.9	39.4	41.2	42.0
CO	ppmvd	25.0	25.0	25.0	25.0
	PPH	15.2	15.4	16.1	16.0
VOC	ppmvd	6.0	6.0	6.0	6.0
	PPH	2.0	2.1	2.2	2.2
Particulates	PPH	3.0	3.0	3.0	3.0
Exhaust Analysis at Turbine Exit					
N2	Vol %	74.02	74.27	74.86	75.24
Ar	Vol %	0.88	0.88	0.89	0.89
CO2	Vol %	2.89	2.89	2.90	2.90
H2O	Vol %	7.98	7.67	6.92	6.44
O2	Vol %	14.22	14.28	14.42	14.52
Emissions at Stack Exhaust					
NOx	ppmvd	3.0	3.0	3.0	3.0
	PPH	6.0	6.0	6.3	6.4
CO	ppmvd	5.0	5.0	5.0	5.0
	PPH	6.0	6.0	6.4	6.5
VOC	ppmvd	2.0	2.0	2.0	2.0
	PPH	1.4	1.4	1.5	1.5
Particulates	PPH	6.0	6.0	6.0	6.0
NH3	ppmvd	10.0	10.0	10.0	10.0
	PPH	7.3	7.4	7.7	7.8

information to estimate pollutant concentrations from continuous sources. The following paragraphs summarize the general dispersion modeling methodology.

The model input data consists of topography and location parameters, site configuration information, atmospheric wind and stability criteria, and emissions data.

Since the topography surrounding the proposed facility is relatively flat, it is characterized for modeling purposes as simple terrain and, therefore, all elevations in the modeling analysis were assumed to be at the same elevation as the source. The site boundary and the location of each of the main structures were determined from a standard (metric) grid system and input to the model in the form of x,y coordinates. The stack was characterized as a point source at a specific grid location. The stack parameters used as input to the model are as follows.

- Stack height 15.24 meters (50 feet)
- Stack gas exit temperature 661° K (730° F)
- Stack gas exit velocity 35.8 meters per second (117.4 feet per second)
- Stack diameter 3.66 meters (12 feet)

The affects of aerodynamic downwash (turbulence) due to the three largest structures associated with the facility (the SCR vessel, a Raw Water tank, and a Demineralized Water Tank) are accounted for in the ISCST3 model. An offsite building and large water tank immediately west of the Lodi Electric Energy Facility (LEEF) site were also included based on their potential to contribute to building downwash in the dispersion model analysis. Other lower profile structures on the site (generator housings, the compressor unit, and miscellaneous other support structures) were not included in the building downwash calculations. The building dimensions for the five significant structures were analyzed using EPA modeling software (BPIP), Building Profile Input Program, Version 95086) designed specifically to derive 36 wind-direction-specific building heights and building widths for use in the downwash calculations within the ISCST3 model.

As indicated above the ISCST3 model utilizes a worst-case meteorological file with various wind speed and stability class combinations to identify the worst possible dispersion conditions. The wind speed, stability combinations used matched those in the EPA approved screening model SCREEN3 model. Those conditions are summarized in Table J-3. To conservatively account for land use in the vicinity surrounding the proposed facility the model was run using parameters associated with urban dispersion conditions. Trial runs indicated predicted impacts would be lower if rural dispersion conditions were used.

The emissions of each criteria pollutant from the turbine exhaust stack were determined by assuming that the maximum potential emissions for each pollutant would be approximately 1 gram per second, although values ranging from 0.2 to 0.8 grams per second were expected

based on the calculated LEEF engineering design emissions data (Table J-2). Using these maximized stack emissions, the BPIP and ISCST3 models were run to estimate the maximum potential effects from the atmospheric transport of the emissions from the proposed LEEF stack location. The results of the dispersion modeling provide hourly maximum concentration values. These hourly maximum values were then used to estimate both longer term (8 hour, 24 hour, and annual) concentrations.

TABLE J-3
SCREENING METEOROLOGY USED IN THE ISCST3 MODELING ANALYSIS

Stability Class	Wind Speed (meters per second)												
	1	1.5	2	2.5	3	3.5	4	4.5	5	8	10	15	20
A	*	*	*	*	*								
B	*	*	*	*	*	*	*	*	*				
C	*	*	*	*	*	*	*	*	*	*	*		
D	*	*	*	*	*	*	*	*	*	*	*	*	*
E	*	*	*	*	*	*	*						
F	*	*	*	*	*	*	*						

The maximum hourly concentrations output by the model were used as the basis for the project impacts shown in Table J-4. Values other than the maximum hourly concentration (i.e. 8 hour, 24 hour, and annual concentrations) were estimated from the hourly maximums. The multiplying factors recommended by the EPA for each extended period (0.9 for 8 hour, 0.6 for 24 hour, and 0.1 for annual maximum concentrations) were applied to the hourly maximum concentrations of each pollutant to calculate the respective extended period average concentration estimates.

Ambient Air Quality Impact Analysis Results

Modeled maximum possible impacts were added to maximum observed background concentrations and the resulting total concentrations were compared to the ambient air quality standards. The maximum impacts are shown in Table J-4. The highest background concentrations were determined by taking the highest pollutant concentration measured at the Stockton (Hazelton Street) air quality monitoring station during years 1999 through 2001 as representative of the regional maximum conditions. Using these maximum background concentrations also results in a conservative analysis in the prediction of maximum impacts, since the ambient (meteorological) conditions resulting in the maximum project impact may not coincide with the ambient conditions resulting in the maximum background concentration.

Under the above assumptions all criteria pollutant concentrations related to the project, except for 24-hour PM_{10}, are expected to be well under the ambient air quality standards.

TABLE J-4
MODELED MAXIMUM PROJECT IMPACTS

Pollutant	Averaging Time	Maximum Project Impact ($\mu g/m^3$)	Background Concentrations[3] ($\mu g/m^3$)	Total Impact ($\mu g/m^3$)	State Standard ($\mu g/m^3$)	Federal Standard ($\mu g/m^3$)
NO_2	1-hour	33.1	199.02	240.5	470	--
	Annual	0.33[4]	42.2	42.61	--	100
CO	1-hour	25.53	--	25.53	22857	40000
	8-hour	23.0	6891.4	6914.4	10000	10000
PM_{10}	24-hour	14.4	150	164.4	50	150
	AGM[1]	--	30	--	30	--
	AAM[2]	0.2[4]	--	--	--	50

1 Annual Geometric Mean

2 Annual Arithmetic Mean

3 The highest background concentration was determined from the highest concentrations measured at the Hazelton St. air quality monitoring station in Stockton during the past three years.

4 The annual concentration is assumed to be 0.1 times the project maximum 1 hour impact.

Although the project 24-hour PM_{10} emissions add to a background that potentially exceeds the standard, the model shows that the impact will be limited to a small area along the property fence line. In addition the PM_{10} emissions from the LEEF will be controlled so as not to exceed the emissions reduction threshold of 14.6 tons per year in accordance with SJVUAPCD regulations.

Further, Table J-5 shows the distances of the predicted maximum impacts from the modeled stack emissions source. For the one-hour averaging period used, maximum impacts are predicted to occur along the east fenceline of the site at a distance of approximately 68 meters (224 feet) from the base of the exhaust stack. Figure J-1 shows the model output for NO_x at receptor data points overlaid with a contour plot. The figure indicates that concentrations 100 meters (328 feet) beyond the fence are less than half the predicted peak value. The maximum impact area is at the eastern boundary of the site in the "downwash" (turbulent) area caused by a combination of the SCR structure and the large water tank west of the site. Plots for VOC, CO, and PM_{10} show a similar pattern with lower maximum values. The modeling files have been provided under separate cover to the SJVUAPCD for their review and analysis.

Based on the above discussion, the proposed LEEF will not cause or contribute significantly to any ambient air quality standard violation.

TABLE J-5
LOCATION OF MAXIMUM MODELED CONCENTRATIONS

Pollutant	Maximum Concentration ($\mu g/m^3$)	Location UTM Coordinates X-east (m)	Location UTM Coordinates Y-north (m)	Distance from STACK (m)	Direction from STACK
NO_2					
1-hour average:	33.1	653506.5	4221542.5	68.1	E
Annual average:	0.33	653506.8	4221563.0	68.4	E
CO					
1-hour average:	25.53	653506.5	4221542.5	68.1	E
8-hour average:	23.0	653506.5	4221542.5	68.1	E
PM_{10}					
24-hour average:	14.4	653506.8	4221563.0	68.4	E
Annual average:	0.3	653506.8	4221563.0	68.4	E

AIR TOXICS

Health Risk Assessment

The combustion turbine is the primary potential air toxic emission source. Emissions of air toxics associated with the combustion of natural gas from the proposed turbine were calculated using emission factors from the California Air Toxics Emission Factor (CATEF) database available from the California Air Resources Board (CARB 1996) and the EPA AP-42 emissions factor publication. The higher emission factor from either database was used in calculating impacts. The emission factors are presented in Table J-6. The turbine emission factors (in units of pounds per million standard cubic foot of natural gas [lb/MMscf]) were multiplied by the amount of gas combusted per hour to obtain emissions in units of lb/hr. Ammonia emissions were calculated based on 10 ppm ammonia slip. Annual emissions were calculated assuming operation of the turbines at maximum fuel input rates.

AIR TOXICS IMPACT ASSESSMENT

Using the emissions factors, a screening health risk assessment was performed to estimate potential health effects from toxic emissions from the proposed LEEF. The health risk assessment follows California Air Pollution Control Officers Association (CAPCOA) and California Office of Environmental Health Hazard Assessment (OEHHA) Guidelines. Atmospheric dispersion modeling, using the maximum emissions assumption and the ISCST3 model discussed in the air quality analysi, was performed to simulate the transport of potential toxic air contaminants (TACs). The dispersion modeling was used to estimate both long-term (annual) and short-term (hourly) concentrations. These concentrations were then used to estimate the potential for adverse health affects in terms of carcinogenic risk (long-

term), and non-carcinogenic chronic (long-term) and acute (short-term) hazard indices via inhalation exposure pathway. The following paragraphs summarize only the health risk calculations and results since a detailed discussion of the ISCST3 model is provided in the discussion of the air quality methodology. An electronic copy of the risk assessment modeling file has been provided to the SJVUAPCD for their review and assessment.

Since the ISCST3 model output is in units of 1-hour average concentrations for simple terrain, the hourly average concentrations output by the model were multiplied by a persistence factor of 0.1 (CAPCOA, 1987) to determine the annual average concentrations for the health risk assessment,

Table J-6 provides the emissions estimates that were used to determine the exposure concentrations of TACs. The inputs to the model are the pounds per hour values in the right hand column of the table.

TABLE J-6
AIR TOXIC CONTAMINANT EMISSION ESTIMATES

	Emission Factors			Annual	Maximum Hourly
	CATEF[1]	AP-42[2]	Maximum	Per Turbine	Per Turbine
Pollutant	lb/MMcf	lb/MMcf	lb/MMcf	TPY	lb/hr
Acetaldehyde[3]	1.37E-01	4.08E-02	1.37E-01	1.560E-01	6.242E-02
Acrolein[3]	1.89.E-02	6.53E-03	1.89E-02	2.153E-02	8.611E-03
Ammonia[4]	--	--	--	1.925E+01	7.700E+00
Benzene[3]	1.33E-02	1.22E-02	1.33E-02	1.515E-02	6.059E-03
1,3-Butadiene[3]	1.27E-04	4.39E-04	4.39E-04	4.996E-04	1.998E-04
Dichlorobenzene		1.20E-03	1.20E-03	1.367E-03	5.467E-04
Ethylbenzene[3]	1.79E-02	3.26E-02	3.26E-02	3.718E-02	1.487E-02
Fomaldehyde[3]	9.17E-01	7.24E-01	9.17E-01	1.044E+00	4.178E-01
Hexane	2.59E-01	1.80E+00	1.80E+00	2.050E+00	8.201E-01
Naphthalene[3]	1.66E-03	1.33E-03	1.66E-03	1.891E-03	7.563E-04
PAHs[3,5]	6.55E-04	9.18E-04	9.18E-04	1.046E-03	4.182E-04
Propylene Oxide[3]	4.78E-02	2.96E-02	4.78E-02	5.439E-02	2.176E-02
Toluene[3]	7.10E-02	1.33E-01	1.33E-01	1.510E-01	6.041E-02
Xylenes[3]	2.61E-02	6.53E-02	6.53E-02	7.435E-02	2.974E-02

1 California Air Toxics Emission Factors (CATEF), Version 1.2, July 1998.

2 Unless a revised EPA AP-42 natural gas turbine emission factor is available (indicated by footnote "3"), emission factors from EPA AP-42, Section 1.4 (Supplement D, 7/98).

3 Revised EPA AP-42 natural gas turbine emission factors from EPA AP-42, Section 3.1 (Supplement F, 4/00).

4 Ammonia slip emissions from the SCR (Assume 10 ppmvd@15%O_2).

5 PAH Emission factor has been adjusted. Naphthalene has been subtracted from the sum of Total PAH.

Table J-7 shows the results of the model. The column headed "Hourly Emissions Turbine (g/s)" are the model emissions input values from Table J-6 converted to grams per second.

The potential cancer risk for inhaled TACs is estimated by multiplying the exposure concentration ($\mu g/m^3$) computed by the model by its cancer "unit risk factor" (URF). This is the estimated cancer risk for a continuous exposure to 1 $\mu g/m^3$ of the substance over a 70-year lifetime. The incremental lifetime cancer risk was calculated and summed to obtain an overall cancer risk.

Non-cancer health affects can be either chronic (long-term) or acute (short-term). In determining potential non-cancer health affects, it is assumed that there is a dose threshold below, which no effects occur. The air concentration corresponding to this dose is the reference exposure level (REL). Non-cancer health effects are measured in terms of a hazard index (HI). The chronic HI was calculated by summing the ratios of annual pollutant concentrations and their pollutant specific RELs. Similarly, the acute HI was calculated by summing the ratios of maximum hourly pollutant concentrations and their pollutant specific RELs.

The screening health risk assessment shows that the emissions from the proposed power plant will cause no serious health effects. A cancer risk of less than one in one million is considered acceptable. The estimated cancer risk from LEEF due to exposures through inhalation was estimated to be 0.68 in one million. Acute and chronic hazard indices of less than one are also considered not to cause adverse health affects. The acute and chronic hazard indices from the proposed LEEF were estimated to be 0.21 and 0.04, respectively.

The combination of worst-case meteorological data, maximum emissions, and continuous 70-year operation and exposure results in a very conservative estimate of potential health risk associated with the LEEF. Even with these conservative assumptions, the facility impacts are below health-based standards. Actual health risks are likely to be below those estimated here. Table J-7 summarizes the estimated pollutant concentrations, toxicity values used to calculate health effects, and the calculated maximum cancer risk, and non-cancer hazard indices.

CONSTRUCTION EMISSIONS

Emissions from construction equipment were calculated based on published USEPA emission factors (AP-42), assuming a 12-hour work day, 20 work days per month, and estimated average equipment utilization rates.

Daily emissions levels developed by the South Coast Air Quality Management District (SCAQMD) for typical construction activities were used to evaluate the emissions potential during the construction period. Table J-8 contains the individual equipment emissions factors

TABLE J-7. TOXIC AIR CONTAMINANT EMISSIONS AND MODELING RESULTS

Pollutant	Annual Emissions	Hourly Emissions	Concentrations - All Turbines ($\mu g/m^3$)		Unit Risk Factors	Chronic Reference Exposure Levels	Acute Reference Exposure Levels	Cancer Risk	Chronic Hazard Index	Acute Hazard Index
	Turbine g/s	Turbine g/s	Annual $\mu g/m^3$	Hourly $\mu g/m^3$	$(1/\mu g/m^3)$	$\mu g/m^3$	$\mu g/m^3$			
X/Q:			3.17	31.7						
Acetaldehyde	4.489E-03	7.864E-03	1.423E-02	2.493E-01	2.70E-06	9		3.842E-08	1.581E-03	
Acrolein	6.193E-04	1.085E-03	1.963E-03	3.439E-02			1.90E-01			1.810E-01
Ammonia	5.538E-01	9.702E-01	1.755E+00	3.076E+01		200	3.20E+03		8.777E-03	9.611E-03
Benzene	4.358E-04	7.635E-04	1.381E-03	2.420E-02	2.90E-05	60	1.30E+03	4.006E-08	2.302E-05	1.862E-05
1,3-Butadiene	1.437E-05	2.518E-05	4.556E-05	7.981E-04	1.70E-04			7.744E-09		
Dichlorobenzene	3.932E-05	6.888E-05	1.246E-04	2.184E-03	1.10E-05			1.371E-09		
Ethylbenzene	1.069E-03	1.874E-03	3.390E-03	5.940E-02		2000			1.695E-06	
Fomaldehyde	3.005E-02	5.264E-02	9.524E-02	1.669E+00	6.00E-06	3	9.40E+01	5.715E-07	3.175E-02	1.775E-02
Hexane	5.898E-02	1.033E-01	1.870E-01	3.275E+00		7000			2.671E-05	
Naphthalene	5.439E-05	9.529E-05	1.724E-04	3.021E-03		9			1.916E-05	
PAHs										
Benzo(a)anthracene	9.850E-07	1.610E-06	3.122E-06	5.104E-05	1.10E-04			3.435E-10		
Benzo(s)pyrene	6.060E-07	7.130E-07	1.921E-06	2.260E-05	1.10E-03			2.113E-09		
Benzo(b)fluoranthene	4.920E-07	5.790E-07	1.560E-06	1.835E-05	1.10E-04			1.716E-10		
Benzo(k)fluoranthene	4.790E-07	5.640E-07	1.518E-06	1.788E-05	1.10E-04			1.670E-10		
Chrysene	1.100E-06	1.290E-06	3.487E-06	4.089E-05	1.10E-05			3.836E-11		
Dibenz(a,b)anthracine	1.020E-06	1.200E-06	3.233E-06	3.804E-05	1.20E-03			3.880E-09		
Indeno(1,2,3,-cd)pyrene	1.020E-06	1.200E-06	3.233E-06	3.804E-05	1.10E-04			3.557E-10		
Propylene Oxide	1.565E-03	2.741E-03	4.960E-03	8.689E-02	3.70E-06	30	3.10E+03	1.835E-08	1.653E-04	2.803E-05
Toluene	4.345E-03	7.612E-03	1.377E-02	2.413E-01		300	3.70E+04			
Xylenes	2.139E-03	3.747E-03	6.780E-03	1.188E-01		700	2.20E+04			
							TOTAL:	**6.845E-07**	**4.234E-02**	**2.084E-01**

Source: Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values, March 2002

TABLE J-8

CONSTRUCTION EMISSIONS LODI ELECTRIC ENERGY FACILITY

Construction Equipment	No. of Pieces	Hp	Utilization (percent)	Time At Full Load (Hours/day)	CO				ROC				NO_x				SOx				PM_{10}			
					lb/hr	lb/hp-hr	lb/day	T/mo	lb/hr	lb/hp-hr	lb/day	T/mo	lb/hr	lb/hp-hr	lb/day	T/mo	lb/hr	lb/hp-hr	lb/day	T/mo	lb/hr	lb/hp-hr	lb/day	T/mo
Front end loader/backhoe, diesel	2	111	20	4.8	1.665	0.015	7.992	0.0799	0.333	0.003	1.5984	0.016	2.442	0.022	11.722	0.1172	0.222	0.002	1.0656	0.0107	0.111	0.001	0.5328	0.0053
Dozer tractor crawler, diesel	1	400	10	1.2	12.8	0.032	15.36	0.1536	2	0.005	2.4	0.024	10.4	0.026	12.48	0.1248	0.8	0.002	0.96	0.0096	0.8	0.002	0.96	0.0096
Diesel grader	1	135	10	1.2	1.702	x	2.0424	0.0204	0.039	x	0.0468	0.0005	0.713	x	0.8556	0.0086	0.713	x	0.8556	0.0086	0.713	x	0.8556	0.0086
Tamper, gasoline	1	25	15	1.8	2.553	x	4.5954	0.046	0.043	x	0.0774	0.0008	0.004	x	0.0072	7E-05	0.004	x	0.0072	7E-05	0.004	x	0.0072	7E-05
Roller vibrator, diesel	1	130	10	1.2	0.91	0.007	1.092	0.0109	0.26	0.002	0.312	0.0031	26	0.2	31.2	0.312	0.26	0.002	0.312	0.0031	0.13	0.001	0.156	0.0016
Water truck	1	225	10	1	17.02	x	17.02	0.1702	0.543	x	0.543	0.0054	0.412	x	0.412	0.0041	0.412	x	0.412	0.0041	0.412	x	0.412	0.0041
Transit mix trucks	1	220	5	0.6	1.32	0.006	0.792	0.0079	0.022	0.002	0.0132	0.0001	4.62	0.021	2.772	0.0277	0.44	0.002	0.264	0.0026	0.33	0.0015	0.198	0.002
Crane, diesel (50 ton)	1	150	10	1.2	1.35	0.009	1.62	0.0162	0.45	0.003	0.54	0.0054	3.45	0.023	4.14	0.0414	0.3	0.002	0.36	0.0036	0.225	0.0015	0.27	0.0027
Crane, diesel (100 ton)	1	300	5	0.6	2.7	0.009	1.62	0.0162	0.9	0.003	0.54	0.0054	6.9	0.023	4.14	0.0414	0.6	0.002	0.36	0.0036	0.45	0.0015	0.27	0.0027
Crane, diesel (300 ton)	1	700	5	0.6	6.3	0.009	3.78	0.0378	2.1	0.003	1.26	0.0126	16.1	0.023	9.66	0.0966	1.4	0.002	0.84	0.0084	1.05	0.0015	0.63	0.0063
Manlift, telescoping, diesel	4	25	10	4.8	0.325	0.013	1.56	0.0156	0.075	0.003	0.36	0.0036	0.775	0.031	3.72	0.0372	0.05	0.002	0.24	0.0024	0.0375	0.0015	0.18	0.0018
Forklift, gasoline (2 ton)	1	125	5	0.6	71.25	0.57	42.75	0.4275	3.125	0.025	1.875	0.0188	1.375	0.011	0.825	0.0083	0.075	0.0006	0.045	0.0005	0.0063	5E-05	0.0038	4E-05
Fugitive Dust (2 Acres)																							17.6	0.18

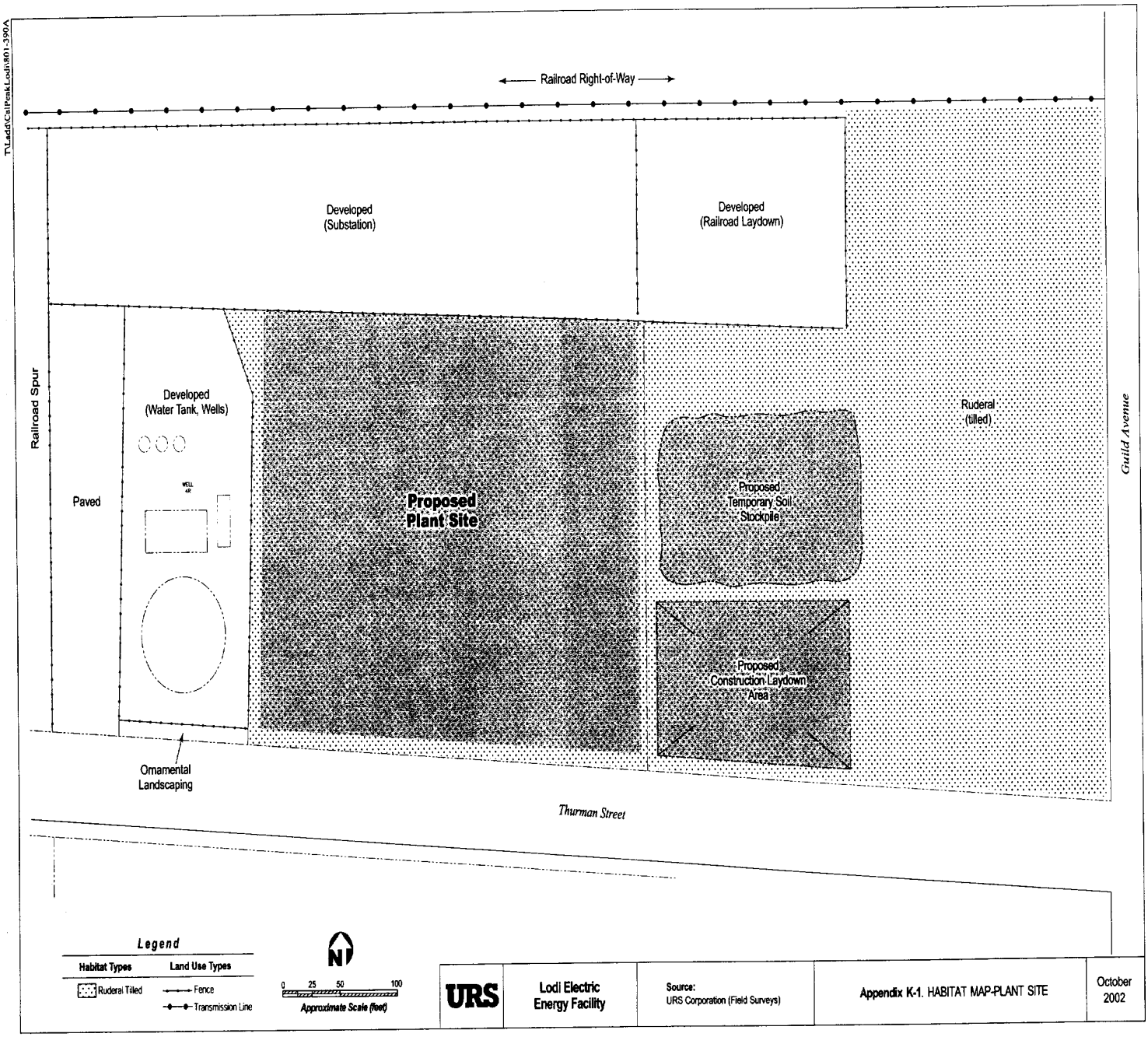
TOTALS	CO	lb/day	T/mo	ROC	lb/day	T/mo	NO_x	lb/day	T/mo	SO_x	lb/day	T/mo	PM_{10}	lb/day	T/mo
	119.9	100.22	1.0022	9.89	9.5658	0.0957	73.191	81.933	0.8193	5.276	5.7214	0.0572	4.2688	22.075	0.2248
SCAQMD Significant Emissions Level		550			75			100			N/A			150	
March		92.472	0.9943		7.3926	0.0955		61.641	0.7916		4.0174	0.0546		20.797	0.2228
April		100.22	1.0022		9.5658	0.0957		81.933	0.8193		5.7214	0.0572		22.075	0.2248
May		70.234	0.7687		5.4432	0.0557		56.869	0.5773		2.833	0.037		19.72	0.2098

12 hrs per day
20 days per month
Emissions Data Source:SCAQMD CEQA Air Quality habdbook (1993), Table A9-8-A (lb/hr) and Table A9-8-B (lb/hp-hr)

in either pounds per hour or pounds per horsepower hour, depending on the type of equipment. Daily emissions in pounds are also shown as are monthly totals in tons per month for each of the criteria pollutants. The SCAQMD significance levels are shown below the table.

Emissions at or below the SCAQMD daily values are considered not to be significant in terms of air quality impacts in both urban and rural locations. For the Lodi Electric Energy Facility the construction related emissions of all criteria pollutants are well below these limits.

Further, it is anticipated that the SJVUAPCD conditional approval will contain emissions limits and monitoring requirements to assure that the project will not contribute substantially to air quality violations. A mitigation plan will be developed to ensure construction emissions are minimized and controlled during the brief 3-month construction period.


T:\Lodi\CalPeak\Lodi\801-390A
Railroad Right-of-Way
Developed
(Substation)
Developed
(Railroad Laydown)
Railroad Spur
Developed
(Water Tank, Wells)
Paved
Proposed
Plant Site
Proposed
Temporary Soil
Stockpile
Ruderal
(tilled)
Guild Avenue
Proposed
Construction Laydown
Area
Ornamental
Landscaping
Thurman Street
Legend
Habitat Types
Land Use Types
Ruderal Tilled
Fence
Transmission Line
0 25 50 100
Approximate Scale (feet)
URS
Lodi Electric
Energy Facility
Source:
URS Corporation (Field Surveys)
Appendix K-1. HABITAT MAP-PLANT SITE
October
2002

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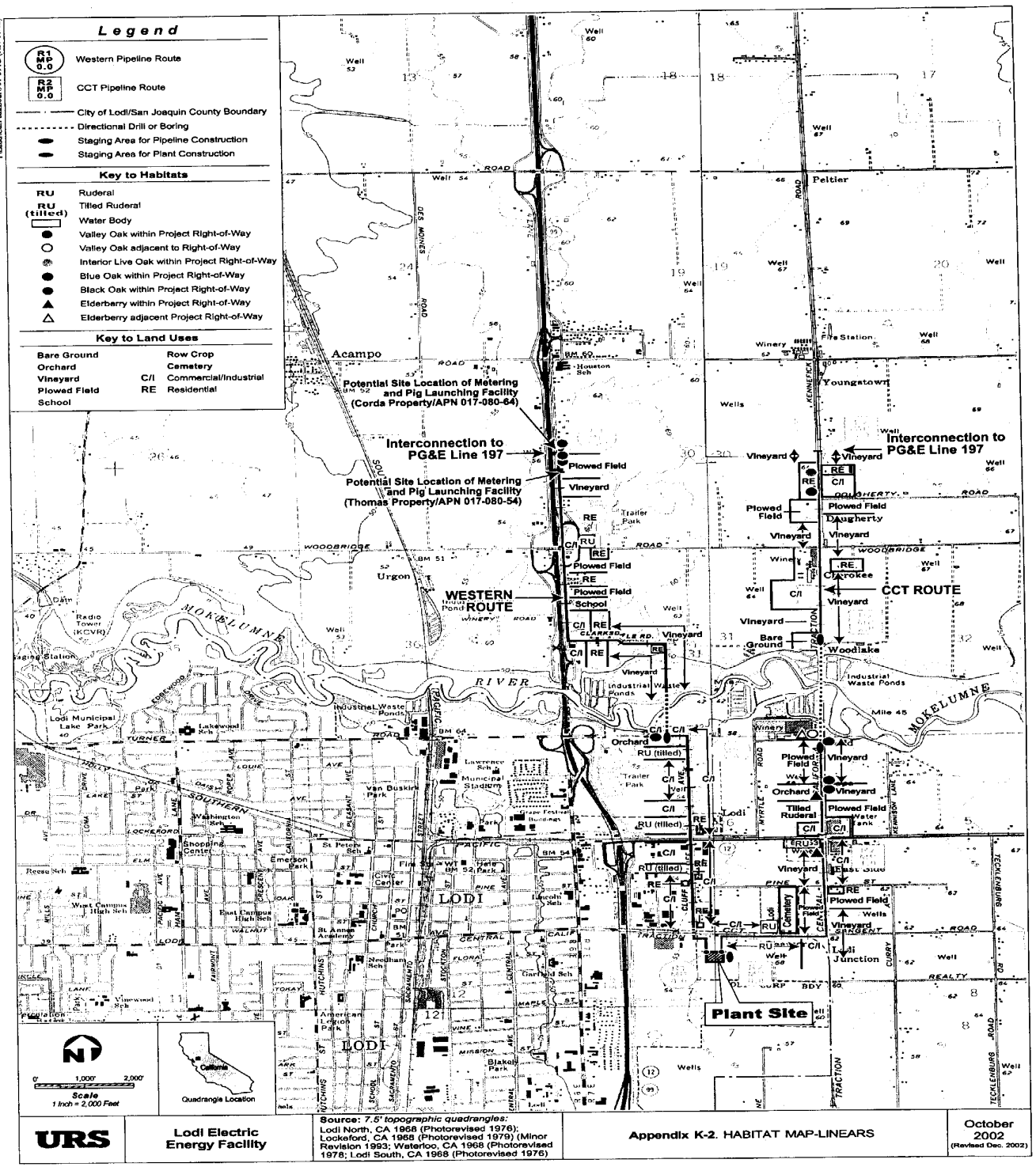


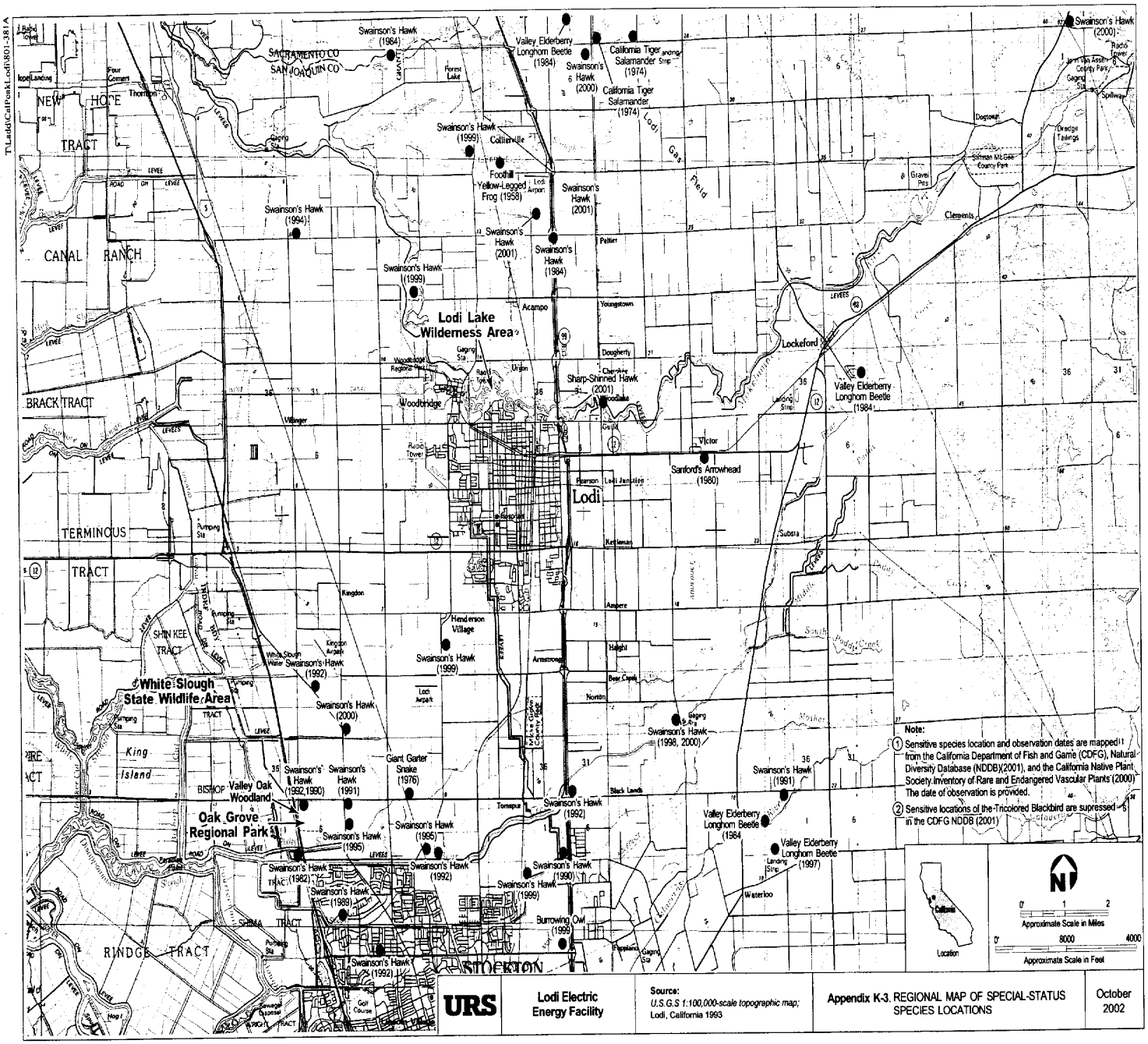

T:\Ledd\CalPoint.cdr\801-381-A
SACRAMENTO CO
SAN JOAQUIN CO
NEW HOPE TRACT
CANAL RANCH
BRACK TRACT
TERMINOUS TRACT
SHIN KEE TRACT
King Island
RINGE TRACT
SHIMA TRACT
Lodi Lake Wilderness Area
White Slough State Wildlife Area
Oak Grove Regional Park
Lodi
STOCKTON
Swainson's Hawk (1984)
Valley Elderberry Longhorn Beetle (1984)
Swainson's Hawk (2000)
California Tiger Salamander (1974)
Swainson's Hawk (1999)
Foothill Yellow-Legged Frog (1953)
Swainson's Hawk (2001)
Swainson's Hawk (1994)
Sharp-Shinned Hawk (2001)
Sanford's Arrowhead (1980)
Giant Garter Snake (1976)
Swainson's Hawk (1992,1990)
Swainson's Hawk (1991)
Swainson's Hawk (1995)
Swainson's Hawk (1982)
Swainson's Hawk (1989)
Swainson's Hawk (1992)
Swainson's Hawk (1998, 2000)
Swainson's Hawk (1990)
Burrowing Owl (1999)
Valley Elderberry Longhorn Beetle (1964)
Valley Elderberry Longhorn Beetle (1997)
Note:
1 Sensitive species location and observation dates are mapped from the California Department of Fish and Game (CDFG), Natural Diversity Database (NDDB)(2001), and the California Native Plant Society Inventory of Rare and Endangered Vascular Plants (2000). The date of observation is provided.
2 Sensitive locations of the Tricolored Blackbird are supressed in the CDFG NDDB (2001)
Location
Approximate Scale in Miles
Approximate Scale in Feet
URS
Lodi Electric Energy Facility
Source: U.S.G.S 1:100,000-scale topographic map; Lodi, California 1993
Appendix K-3. REGIONAL MAP OF SPECIAL-STATUS SPECIES LOCATIONS
October 2002

TABLE K-1
PLANT SPECIES LIST
SPECIES OBSERVED FOR ALL SURVEY VISITS

Latin Name	Common Name	Family Name
	Proposed Plant Site	
Amaranthus sp.	Amaranth	Amaranthaceae
*Bromus diandrus**	Ripgut Grass	Poaceae
*Brassica nigra**	Black Mustard	Brassicaceae
*Centaurea solstitialis**	Yellow Star Thistle	Asteraceae
*Cynodon dactylon**	Bermuda Grass	Poaceae
Eremocarpus setigerus	Dove Weed	Euphorbiaceae
Helianthus annuus	Western Sunflower	Asteraceae
Heterotheca grandiflora	Telegraph Weed	Asteraceae
*Hordeum murinum gussoneanum**	Mediterranean Barley	Poaceae
*Lactuca serriola**	Annual Junegrass	Poaceae
*Picris echioides**	Bristly Ox-tongue	Asteraceae
*Rumex crispus**	Curley Dock	Polygonaceae
*Salsola iberica **	Russian Thistle	Chenopodiaceae
*Vulpia sp.**	Foxtail	Poaceae
	Alternative 1 Western Route[1]	
Amaranthus blitoides	Prostrate Pigweed	Amaranthaceae
Amaranthus retroflexus	Redroot Pigweed*	Amaranthaceae
Artemisia douglasiana	Mugwort	Asteraceae
Avena sp.	Oat	Poaceae
*Betula pendula**	European White Birch	Betulaceae
Brassica sp.	Mustard	Brassicaceae
*Bromus diandrus**	Ripgut Grass	Poaceae
*Bromus madrilensis**	Ripgut Brome	Poaceae
*Cedrus sp.**	Cedar	Cupressaceae
*Centaurea solstitialis**	Yellow Star Thistle	Asteraceae
*Cichorium intybus**	Chicory	Asteraceae
*Convolvulus arvensis**	Field Bindweed	Convolvulaceae
Crataegus sp.	Hawthorn	Rosaceae
*Cynodon dactylon**	Bermudagrass	Poaceae
Eremocarpus setigerus	Dove Weed	Euphorbiaceae
Helianthus annuus	Western Sunflower	Asteraceae
Juglans hindsii	Northern California Walnut	Juglandaceae
*Lactuca serriola**	Annual Junegrass	Poaceae
*Linaria vulgaris**	Yellow Toadflax	Scrophulariaceae
*Magnolia grandiflora**	Southern Magnolia	
*Olea europaea**	Olive	Oleaceae
*Paspalum dilatatum**	Dallisgrass	Poaceae
*Phalaris minor**	Littleseed Canarygrass	Poaceae
Pinus sp.	Pine	Pinaceae
Populus fremontii	Fremont Cottonwood	Populus
*Populus nigra**	Lombardy Poplar	Populus
Quercus kelloggi	Black Oak	Fagaceae
Quercus lobata	Valley Oak	Fagaceae
Quercus wislizeni	Interior Live Oak	Fagaceae
*Rumex crispus**	Curley Dock	Polygonaceae
Salix exigua	Sandbar Willow	Salicaceae
Salix nigra	Black Willow	Salicaceae
*Salsola iberica**	Russian Thistle	Chenopodiaceae

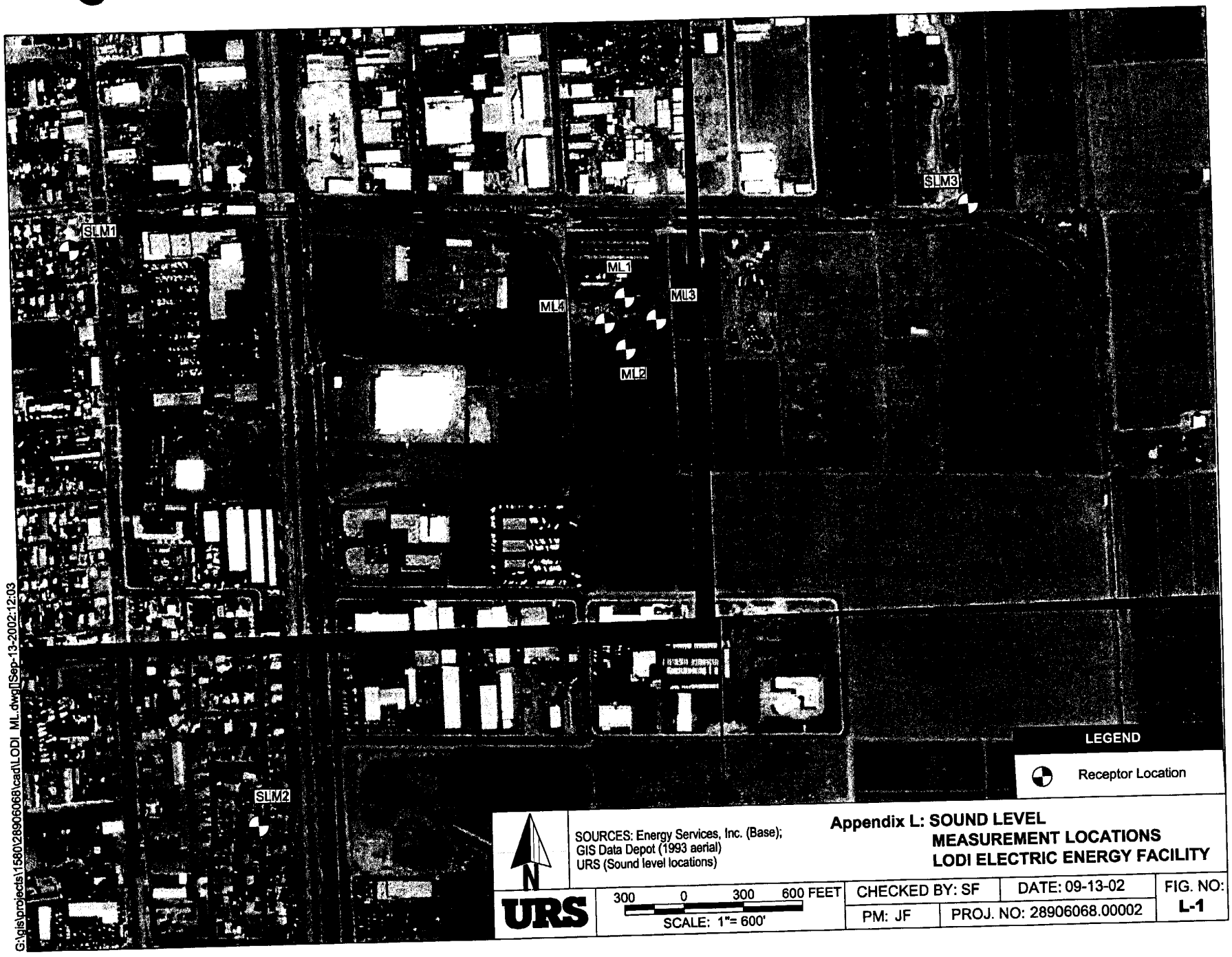
TABLE K-1 (CONTINUED)
PLANT SPECIES LIST
SPECIES OBSERVED FOR ALL SURVEY VISITS

Latin Name	Common Name	Family Name
*Sequoia sempervirens**	California Redwood	Taxodiaceae
*Sonchus oleraceus**	Annual Sowthistle	Asteraceae
*Sorghum halepense**	Johnsongrass	Poaceae
*Washingtonia filifera**	California Palm	Washingtonia
	Alternative 2 CCT Route[1]	
Acer sp.	Maple	Aceraceae
Amaranthus blitoides	Prostrate Pigweed	Amaranthaceae
Amaranthus retroflexus•	Redroot Pigweed	Amaranthaceae
Artemisia douglasiana	Mugwort	Asteraceae
Avena sp.•	Oat	Poaceae
Brassica sp.	Mustard	Brassicaceae
*Bromus diandrus**	Ripgut Grass	Poaceae
Bromus madritensis	Ripgut Brome	Poaceae
Cedrus sp.•	Cedar	Cupressaceae
*Centaurea solstitalis**	Yellow Star Thistle	Asteraceae
*Cichorium intybus**	Chicory	Asteraceae
*Convolvulus arvensis**	Field Bindweed	Convolvulaceae
*Cynodon dactylon**	Bermudagrass	Poaceae
Eremocarpus setigerus	Dove Weed	Euphorbiaceae
*Eucalyptus globulus**	Bluegum Eucalyptus	Myrtaceae
*Juglans californica hindsii**	Northern California Walnut	Juglandaceae
Helianthus annuus	Western Sunflower	Asteraceae
*Lactuca serriola**	Annual Junegrass	Poaceae
*Linaria vulgaris**	Yellow Toadflax	Scrophulariaceae
*Olea europaea**	Olive	Oleaceae
*Paspalum dilatum**	Dallisgrass	Poaceae
Pinus sp.	Pine	Pinaceae
Platanus racemosa	California Sycamore	Platanaceae
Populus fremontii	Fremont Cottonwood	Populus
*Phalaris minor**	Littleseed Canarygrass	Poaceae
Quercus douglasii	Blue Oak	Fagaceae
Quercus kelloggii	California Black Oak	Fagaceae
Quercus lobata	Valley Oak	Fagaceae
Quercus wislizeni	Interior Live Oak	Fagaceae
Robinia pseudoacacia•	Black Locust	Fabaceae
*Rumex crispus**	Curley Dock	Polygonaceae
Salix exigua	Sandbar Willow	Salicaceae
Salix nigra	Black Willow	Salicaceae
Salix sp.	Willow	Salicaceae
*Salsola iberica **	Russian Thistle	Chenopodiaceae
Sambucus mexicanus	Elderberry	Caprifoliaceae
Sonchus oleraceus	Annual Sowthistle	Asteraceae
*Sorghum halepense**	Johnsongrass	Poaceae
*Washingtonia filifera**	California Palm	Washingtonia
*Ulmus sp.**	Elm	Ulmaceae

1 Pipeline route rights-of-way occur mostly within disturbed roadways. Plant species identified in Table I-1 were identified in the immediate vicinity.

TABLE K-2
WILDLIFE SPECIES LIST
SPECIES OBSERVED FOR ALL SURVEY VISITS

Wildlife Species		Plant Site	Western Route	CCT Route
Reptiles				
Sceloporus occidentalis	Western Fence Lizard	X		
Birds				
Accipiter sp.			X	
Aphelocoma coerulescens	Scrub Jay	X		
Accipiter striatus	Sharp-shinned Hawk			X
Buteo Swainsonii	Swainson's Hawk		X	
Chadrius vociferus	Killdeer	X		
Columbu livia	Rock Dove	X		
Pica Nuttalli	Yellow-billed Magpie	X		
Sturnus vulgaris	European Starling	X		
Mammals				
Sylvilagus sp.	Rabbit	X		



SOURCES: Energy Services, Inc. (Base);
GIS Data Depot (1993 aerial)
URS (Sound level locations)

Appendix L: SOUND LEVEL MEASUREMENT LOCATIONS LODI ELECTRIC ENERGY FACILITY

URS

300 0 300 600 FEET
SCALE: 1"= 600'

CHECKED BY: SF	DATE: 09-13-02	FIG. NO: L-1
PM: JF	PROJ. NO: 28906068.00002	

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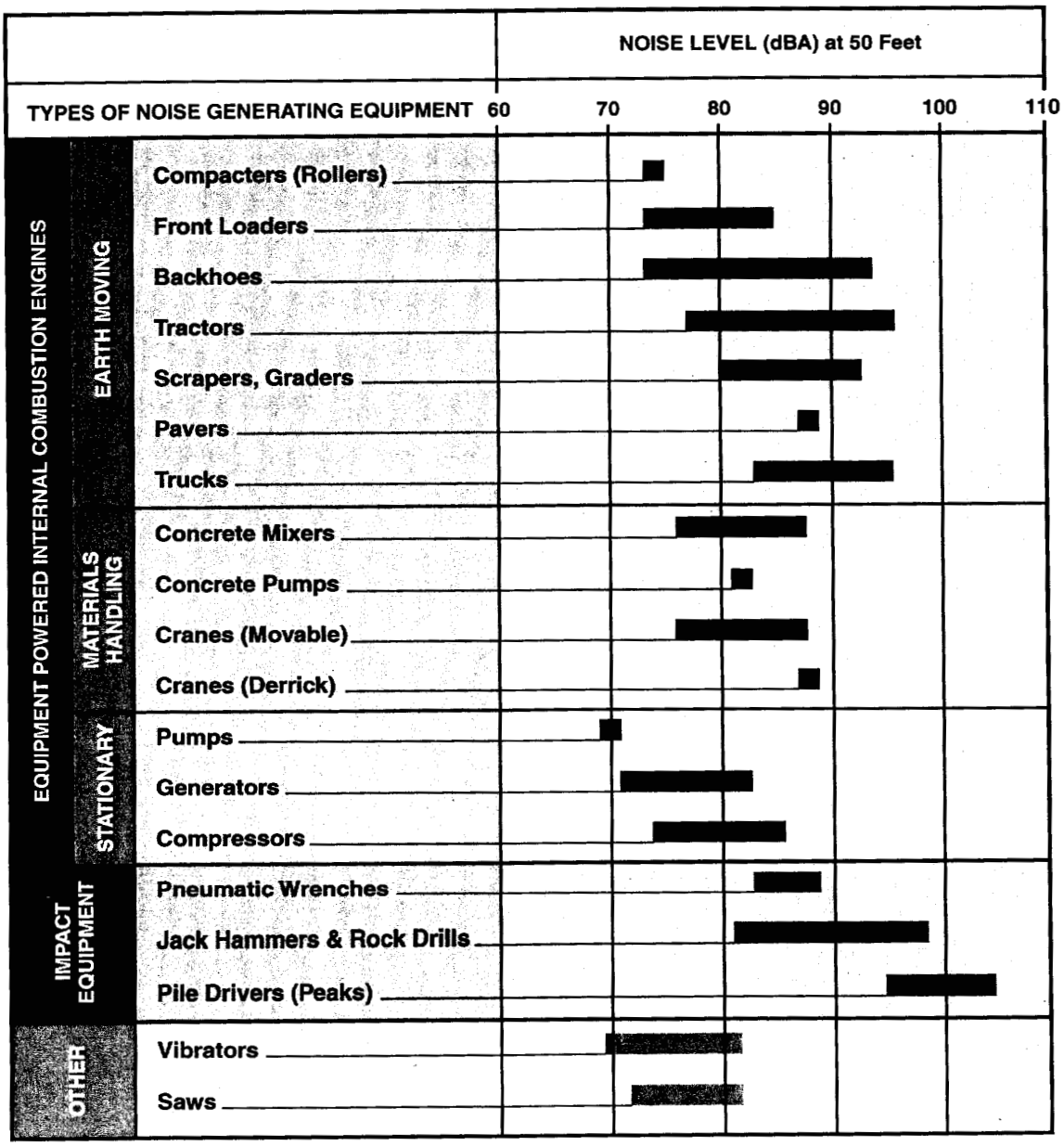
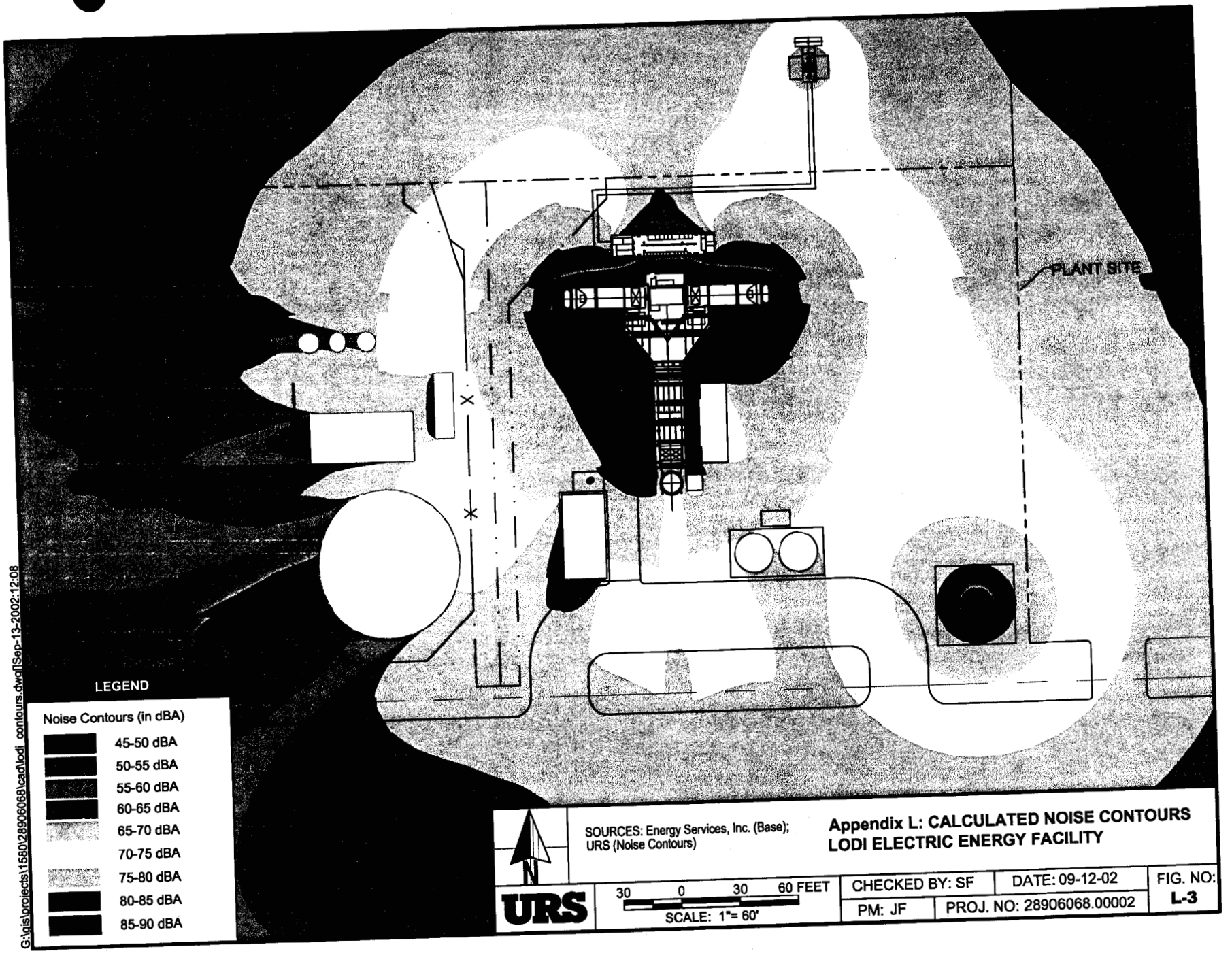
Typical Construction Equipment Noise Generation Levels



URS

Appendix L
Lodi Electric Energy Facility
Figure L-2


PLANT SITE
LEGEND
Noise Contours (in dBA)
45-50 dBA
50-55 dBA
55-60 dBA
60-65 dBA
65-70 dBA
70-75 dBA
75-80 dBA
80-85 dBA
85-90 dBA
N
SOURCES: Energy Services, Inc. (Base);
URS (Noise Contours)
Appendix L: CALCULATED NOISE CONTOURS
LODI ELECTRIC ENERGY FACILITY
URS
30 0 30 60 FEET
SCALE: 1"= 60'
CHECKED BY: SF
DATE: 09-12-02
PM: JF
PROJ. NO: 28906068.00002
FIG. NO:
L-3
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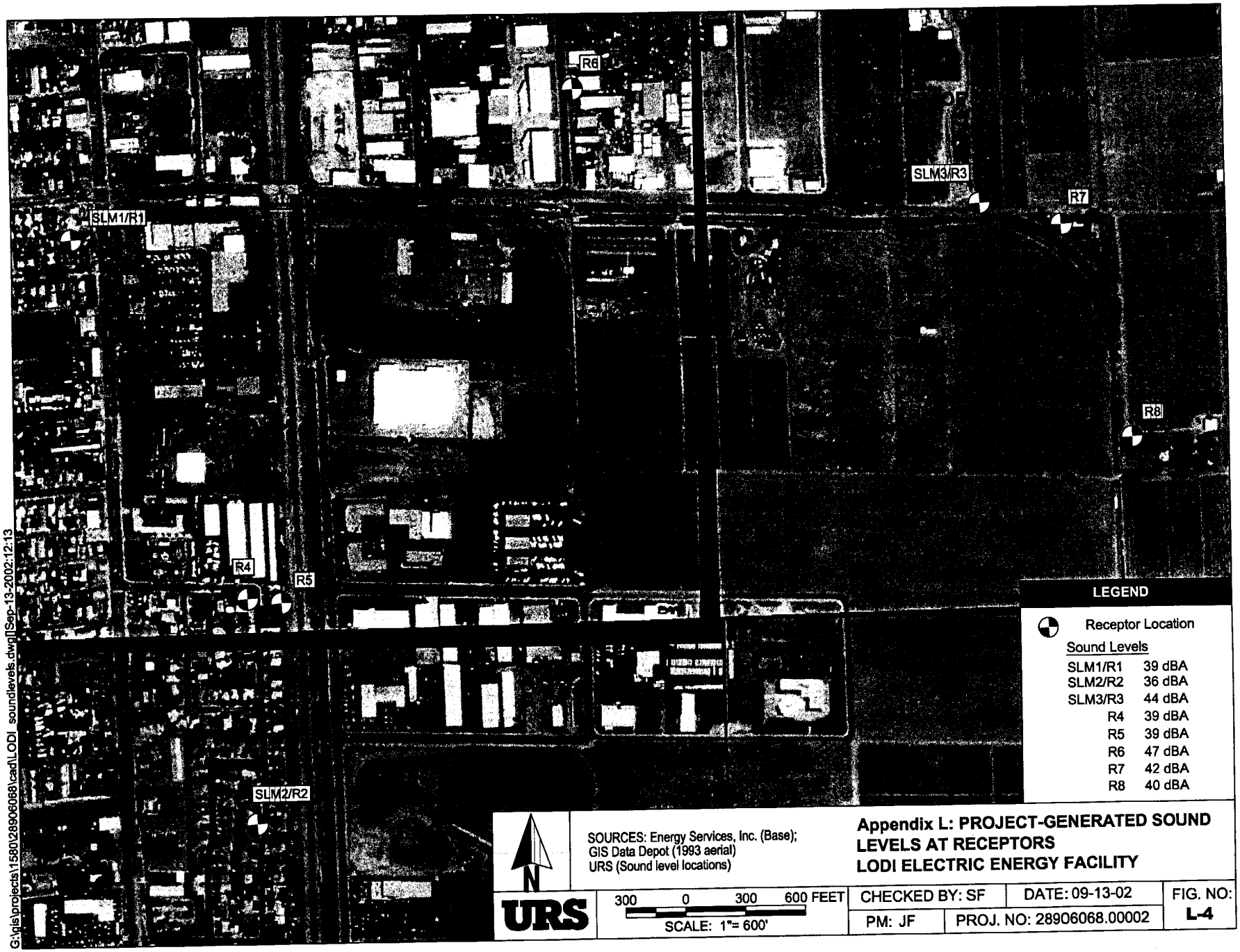

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SOURCES: Energy Services, Inc. (Base);
GIS Data Depot (1993 aerial)
URS (Sound level locations)

Appendix L: PROJECT-GENERATED SOUND LEVELS AT RECEPTORS
LODI ELECTRIC ENERGY FACILITY

URS

300 0 300 600 FEET
SCALE: 1"= 600'

CHECKED BY: SF	DATE: 09-13-02	FIG. NO:
PM: JF	PROJ. NO: 28906068.00002	L-4